



AMERICAN GAS

Association

MONTHLY

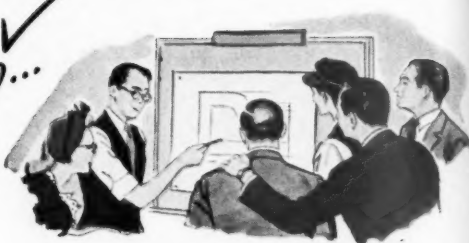
FEBRUARY 1945

VOL. 27 • NO. 2



✓ Your problem...

✓ Our plan...



You want a new kitchen. A *better* kitchen. Where everything really *works* together to save you steps, time, energy. A cool, clean, beautiful place—where you can spend 1500 hours a year—and like it!

And a peek into the future!

Here it is! One of the most *helpful* schemes ever conceived for busy housewives...backed by the entire Gas industry! We're planning *new-type* kitchens—so beautifully thought-out for more leisure, more convenience...so contrived to cut down on fatigue, dirt, heat—even unwanted kitchen odors—that they're called "New Freedom Gas Kitchens"*. Everybody's getting together...kitchen cabinet people, home economics experts, Gas refrigerator and Gas range makers—yes, even housewives. So that, come peacetime, *dozens* of ideas on "New Freedom Gas Kitchens" will be waiting for you—ready for new home or old...for big family or little...for pocketbooks—large or small!



ANOTHER "NEW FREEDOM GAS KITCHEN" DESIGN

New freedom...new convenience for every woman who cooks

"These New Freedom Gas Kitchens"—economical, trouble-free, *completely modern*—will be built around three major work areas:

1. **YOUR REFRIGERATION** and preparation center—featuring a wonderful Gas refrigerator—silent, economical, roomier than ever! 2. **YOUR COOKING CENTER**—featuring a miraculous new Gas range that includes every new discovery to make cooking easier, faster, *better*. Whatever "make" you buy, look for the Certified Performance seal...your guide to the very finest in modern appliances. 3. **YOUR "CLEAN-UP" CENTER** featuring oceans of hot water for dishes—with plenty left for baths and laundry—automatically supplied by clean, economical Gas! Start planning your "New Freedom Gas Kitchen" today!



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GAS



AMERICAN GAS ASSOCIATION



The gas industry is about to step out of its shell and get a whiff of the invigorating atmosphere engendered by a real research and promotion program. It has been a long time since we've had such big news to announce as the raising of a large fund to put life and blood into the gas industry's sinews for its gigantic postwar job. . . . Everyone knows that postwar competition will be fierce but some of us thought all the fighting was going to take place in the other fellow's backyard. Like Popeye and his spinach, the industry's corpuscles are now girding for action. . . . Great credit goes to those company executives who are supporting this farsighted program but Ernest R. Acker is the man of the hour! If the new program is anybody's baby, it's his. He foresaw its need, made it the major theme of his administration as A. G. A. president, headed the fund-raising committee, and worked ceaselessly and unselfishly to put it over the top. A 21-gun salute to him. . . . Aside from the frontpage news, this issue carries some pretty solid stuff for your consumption. That Philadelphia study of house heating load characteristics is a good example.

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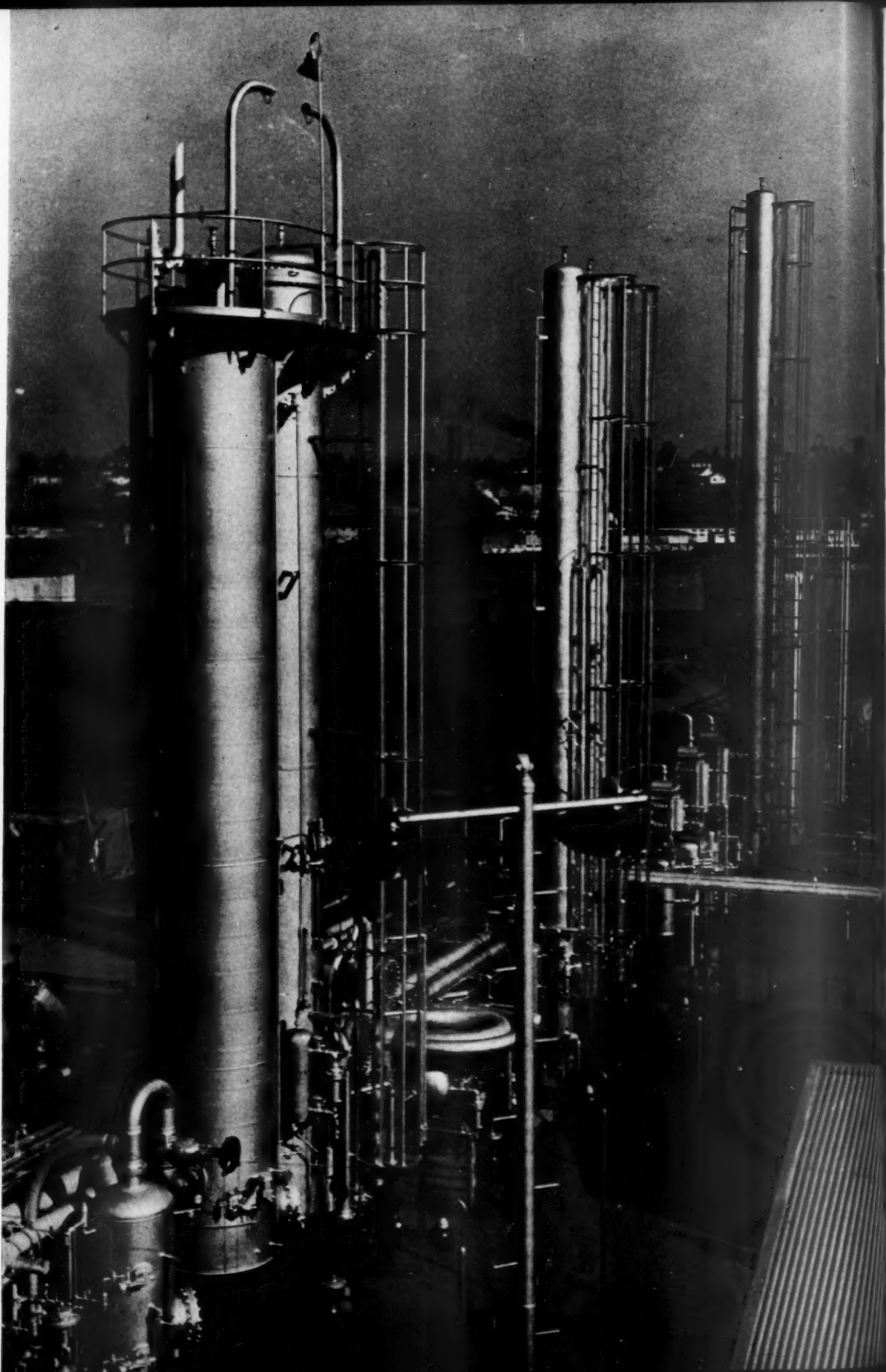
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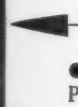
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JAMES M. BEALL, *Editor*

Gas Industry Takes Momentous Steps

THE Executive Board of the American Gas Association, following its meeting January 23, announced two momentous and far-reaching decisions affecting the present and future of the gas industry. The first, a forthright acknowledgment that "there is still a war on," brought immediate cancellation of all national conferences and conventions. Despite the fact that the gas industry's research, technical and general conferences are widely recognized in government circles and elsewhere as being constructive and virtually "essential" in character, there was no hesitation in taking this unprecedented action to aid the war effort.

Nine meetings formerly authorized to be held between the dates of Feb. 8 and June 4, were cancelled as follows:

Technical Conference on Domestic Gas Research, Cleveland, Ohio, February 8-10

West Coast Technical Conference on Domestic Gas Research, Los Angeles, March 7-9 (Sponsored jointly with the Pacific Coast Gas Association)

War Conference on Industrial and Commercial Gas, Toledo, Ohio, March 29-30

Distribution Conference, Chicago, Illinois, April 4-6

Conference on Public Utility Motor Vehicle Operation, Chicago, Illinois, April 4-6

Accounting Conference, Cincinnati, Ohio, April 10-12

Natural Gas Convention, Cincinnati, Ohio, May 7-8

Spring Executive Conference, Cincinnati, Ohio, May 9

Production and Chemical Conference, New York, June 4-6.

Plans are now afoot to fill the gap thus created by presenting important papers and reports in the A. G. A. MONTHLY and the gas trade journals. Possibility of holding "conventions-by-mail" or "conventions-in-print" is receiving consideration.

The second and by far the most important decision announced was that of the gas industry's support of the National Research and Promotional Program. Ernest R. Acker, immediate past president of the Association and chairman

of the special committee charged with raising the funds, declared that their financial goal had been reached. In less than ninety days, gas utility companies throughout the nation have underwritten an expanded program calling for an expenditure of \$1,400,000 a year for three years. While this amount includes the present \$400,000 national advertising fund, it does not include subscriptions to be made by manufacturers of gas appliances and equipment.

Successful conclusion of the campaign enables the gas industry to put into operation plans for research, increased national advertising and the development and execution of industry-wide sales promotion programs coordinated with those of gas utility companies and gas appliance and equipment manufacturers. Details of the plan were announced in the November issue of the A. G. A. MONTHLY and in special mailings to the gas industry.

President J. French Robinson and others hailed this milestone in the industry's progress. Alexander Forward, managing director, wrote Mr. Acker as follows: "It gives me great pleasure to convey to you the unanimous action of the Executive Board today (January 23) in extending to you on motion of Mr. A. F. Bridge, a vote of appreciation for your devoted, untiring and successful efforts in securing the fund for the Gas Industry Research and Development Plan, marking the most important event in the history of the gas industry in the United States and Canada, achieved under your leadership."

Serving with Mr. Acker on the special committee who raised and will administer the fund are N. B. Bertolette, Hartford, Conn.; P. S. Young, Newark, N. J.; C. E. Bennett, Pittsburgh, Pa.; Bruno Rahn, Milwaukee, Wis.; H. K. Wrench, Minneapolis, Minn.; Joseph Bowes, Tulsa, Okla.; C. H. Zachry, Dallas, Texas; Robert W. Hendee, Colorado Springs, Colo.; F. S. Wade, Los Angeles, Calif.; Paul B. McKee, Portland, Oregon; W. Bond Collins, Miami Beach, Fla.; Ex-Officio—J. French Robinson, Cleveland, Ohio; E. J. Boothby, Washington, D. C.; R. H. Hargrove, Shreveport, La.; and J. A. Brown, New York, N. Y.

• Opposite: Processing towers in the light oil recovery area of the Portland (Oregon) Gas and Coke Company's plant. Photographed by Russell Goodman, refinery foreman, this picture won a \$5.00 award in the MONTHLY frontispiece contest.

Breathing Equipment Use and Care

Thorough knowledge of various types of safety equipment necessary in gas utility operations is important means of preventing personnel accidents



Gilbert Ellerbrock

NO discussion of the use of breathing equipment in utility operations would be complete without some comment being made of the various toxic gases and vapors with which we must contend and guard against. From the standpoint of safety, it is necessary to determine that the atmosphere does not contain toxic gases in hazardous concentration and that the concentration of oxygen is sufficient to sustain respiration.

I. Toxic Gases & Vapors—Properties, Physiological Effects & Detection

Carbon Monoxide—Carbon monoxide is the most toxic of the gases normally encountered. It is a constituent of many fuel gases and may become a constituent in the products of combustion of all types of fuels—gas, liquid or solid. Carbon Monoxide (CO) at ordinary temperature is a colorless, odorless and tasteless gas. It is highly poisonous, inducing asphyxiation. It is somewhat lighter than air, diffusing readily and becoming an intimate part of any gas mixture. Carbon monoxide is seldom found free in nature, but is formed in many industrial, commercial, and domestic operations, resulting from the oxidation of carbon-containing material. It is present in the products of combustion of gaseous, liquid and solid fuels when the conditions of combustion are not properly controlled.

The physiological effects of carbon monoxide are rather marked and sudden, relatively small concentrations of the gas being required. Carbon monoxide is a blood poison, i.e., it combines

BY GILBERT ELLERBROCK

Wisconsin Public Service Corporation
Oshkosh, Wis.

with the hemoglobin in the blood which causes internal asphyxiation, since the hemoglobin is no longer able to absorb oxygen and deliver it to the tissues. Hemoglobin shows an affinity for carbon monoxide of some 300 times greater than that for oxygen, and rapidly absorbs it from any atmosphere containing even small amounts.

Table I presents the physiological effects when the concentration of carbon monoxide in air varies over a given range.

The American Standards Association's standard "Allowable Concentration of Carbon Monoxide" states: "the maximum allowable concentration of carbon monoxide shall be 1 part per 10,000 parts of air by volume, with atmospheric oxygen not below 19% by volume for exposures not exceeding a total of eight hours daily and shall be 4 parts per 10,000 parts of air by volume for exposures not exceeding a total of one hour daily."

Carbon monoxide being the most toxic of the gases normally encountered, the detection method should be capable of indicating its presence in concentrations of the order of 0.05%. There are a number of general procedures available for the detection and determination of carbon monoxide in gas mixtures, but the use of palladium chloride affords a simple and rapid procedure for the *qualitative* detection of the gas.

Various modifications have been studied in an attempt to make this method quantitative. In some cases palladium chloride impregnated paper is used. In the United States the ampoule detector was developed consisting of a cotton-covered, thin-walled, glass tube approximately 1½" in

length and 3/16" in diameter. It is filled with a solution of palladium chloride in a water-acetone mixture and hermetically sealed.

The procedure for using the detector is to crush the ampoule wetting the cotton with the palladium solution, then to expose for 10 minutes



Blower type gas mask with safety harness

(minimum) to the air to be tested. If carbon monoxide is present, it reacts with the palladium chloride and changes the color of the ampoule from the brownish-yellow stain of the solution to yellowish-black to black through a range of 2 to 10 parts per 10,000 depending on the concentration of carbon monoxide.

The temperature of the palladium chloride solution is important in making this test, because unless the temperature is around body heat (on the job obtained by placing the bottle

containing it or the ampoule under the arm for five or ten minutes prior to making the test) satisfactory results will not be obtained. Other gases and vapors such as gasoline, ethylene, hydrogen, and hydrogen-sulphide also change the color of the ampoule, and their absence must be known if accurate carbon monoxide findings are to result. Lead acetate solution can be used to differentiate between carbon monoxide and hydrogen-sulphide and activated carbon can be used to absorb the hydro-carbon vapors and gases.

Where manufactured gas is distributed the combustible gas indicator can be used instead of palladium chloride to indicate the presence of carbon monoxide. As mentioned above, activated carbon is used to absorb the hydrocarbon vapors. If a reading is obtained on the indicator without using the activated carbon and then no reading is obtained after passing the sample through the activated carbon, it can be generally assumed that no carbon monoxide is present.

Organic Vapors—Other toxic constituents which may normally be met include gasoline, naphtha, benzol and other light oil vapors, but the toxic concentration of these are of such large magnitude that it is believed that a detection method that would show the presence of 0.15% of combustible gas in air would prove adequate. The combustible gas indicator can be used for this purpose.

Carbon Dioxide—Carbon dioxide is generally not classed as poisonous and its asphyxiating effect is primarily associated with its substitution for oxygen in the air. A person can breathe air containing 3% to 4% carbon di-

oxide with no greater discomfort than an increase in the rate of breathing. At 5% the breathing becomes laborious and 6% is regarded as the critical point. Man is sufficiently adaptable to get along fairly well in an atmosphere containing 17% oxygen, provided toxic gases and vapors are absent.

In so far as carbon dioxide is concerned then, the detection method need only determine that the atmosphere is not so deficient in oxygen as to cause discomfort. Flame safety lamps will indicate whether the atmosphere is deficient in oxygen, the flame being extinguished when the concentration of oxygen is reduced to 17% or less.

Acid Gases or Fumes—Certain acids such as hydrochloric, sulphuric, nitric, hydrofluoric, hydrocyanic, acetic, etc., give off fumes or vapors that are dangerously poisonous, anaesthetic or corrosive to respiratory tract and lung tissues. Such fumes may also burn the skin of the worker's face, hands and arms. One exceedingly serious feature of fume poisoning is that the effects do not always follow promptly upon the exposure, and a man may be in danger of his life without being aware of it. Most dangerous acid fumes give some warning of their presence.

Gases Encountered During Welding & Cutting Operations

It is difficult to obtain definite and exact data concerning the various gases, fumes and dusts generated in welding and cutting operations, consequently it is very necessary to make sure the employees do not breathe them during long and continuous operations. This



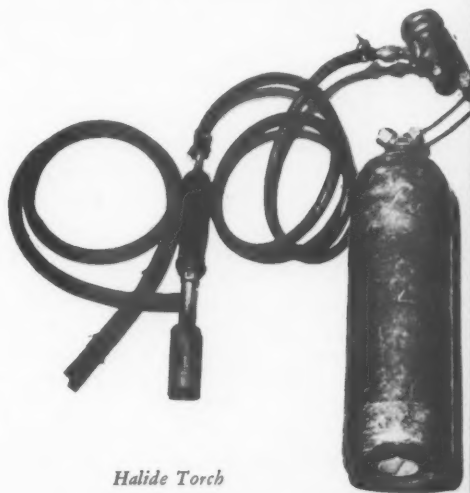
Cannister type gas mask

hazard can be minimized by providing effective ventilation.

Refrigerants—The principal hazards of refrigerants are their irritating action on body membranes, principally of the respiratory tract; and paralysis of the sensory apparatus, produced when the gas is taken into the lungs through respiration. The physiological effect a toxic refrigerant may have on the body depends to a considerable extent on its concentration in the atmosphere and also on the length of time a person is exposed. Therefore, the size of the room into which a gas or vapor escapes may be a very important factor. When certain refrigerants (such as Freon and Methyl Chloride) are exposed to a flame or

TABLE I

Concentration	Physiological Effects
parts of carbon monoxide per ten thousand parts of air	
1	Concentration allowable for an exposure of several hours
4 to 5	Concentration which can be inhaled for 1 hour without appreciable effect
6 to 7	Concentration causing a just appreciable effect after exposure of 1 hour
10 to 12	Concentration causing unpleasant but not dangerous symptoms after exposure of 1 hour
15 to 20	Dangerous concentration for exposure of 1 hour
40 and above	Concentrations which are fatal in exposures of less than 1 hour



Halide Torch

to surfaces that have attained high temperatures, additional hazards may be realized. The products of decomposition may be dangerously toxic or an explosion may result.

Some of the refrigerants here described do not have an odor, even in dangerous concentrations, which would serve as a warning to persons exposed. However, whenever possible in such cases, some volatile substance should be added to the refrigerant to give adequate warning of its presence. A Halide torch can be used to detect



Respirator

the leakage of certain refrigerants, such as Freon and Methyl Chloride. The color of the flame changes in the presence of these gases.

Table 2 gives general data on refrigerants relative to their physiological action, comparative life hazard, odor, and property of giving warning of presence in air when breathed.

II. Use in Gas Distribution Work

There are a number of applications for breathing equipment in gas distribution work; such as the repairing of gas leaks in mains and services, the tapping and bagging-off of "live" mains, working in governor pits, man-holes, valve pits and tunnels. The breathing equipment most suitable for this kind of work is the blower type hose mask. When using this type of mask, care should be taken to locate the blower with respect to the place where the work is being done, so that

Chemicals	Property of Giving Warning of Presence in Air When Breathed	Odor	Comparative Life Hazard (See Footnote 1)	Physiological Action
Ammonia	Adeq. warn.	Pungent	2	Irritant
Butane		Slight	5	
Carbon Dioxide			5	
Carbon Tetrachloride			3	Anesthetic
Chloroform			3	Anesthetic
Dichlorethylene			4	Anesthetic
Dichlorodifluoromethane (Freon, F-12)			6	
Dichlorotetrafluoroethane			6	
Ethane		Very Slight	5	
Ethyl Bromide			4	
Ethyl Chloride		Pungent	Bet 4 & 5	Anesthetic
Methyl Bromide			2	
Methyl Chloride		Similar to Chloroform	4	Anesthetic
Methyl Formate	Adeq. warn.		Bet 4 & 5	
Propane		Slight	5	
Sulphur Dioxide	Adeq. warn.	Pungent	1	Irritant

Note 1—This is not an absolute scale of toxicity; however, the numbers do indicate the order of comparative life hazards when refrigerants are discharged into surrounding air, in the absence of flames or hot objects. Group 1 indicates gases or vapors which, in concentrations as low as one-half of one per cent and for exposures of 5 minutes or less, may be lethal. Group 6 indicates gases or vapors which, over reasonably long exposures and in concentrations of at least 20 per cent, do not appear to produce serious injury. The numbers between 1 and 6 represent approximate graduations of these life hazards.

leaking gas will not enter the blower and be supplied to the man wearing the mask.

When work is to be done in governor pits or other closed spaces, the pit must be well ventilated and the atmosphere in the pit should be checked for the presence of carbon monoxide. The palladium chloride ampoule previously mentioned can be used for this purpose. If the air in the pit contains carbon monoxide, a blower type mask must be used.

The use of the blower-type mask necessitates the presence of at least three men—one wearing the mask, one operating the blower and one in a position where he is not subjected to any gas, and at the same time can keep the man wearing the mask in view at all times.

III. Use in the Gas Plant

There are a number of operations in a gas plant requiring the use of masks. The cleaning of oil, tar, light oil and acid tanks requires the use of a canister or blower type mask.

The cleaning of damper boxes in coke ovens necessitates the use of a blower type mask, because this job must be done while the battery is in

operation, and the operator works in an atmosphere containing producer gas, which is high in carbon monoxide content.

Any time work is done on gas generating or purifying equipment while the equipment is in use and where gas is present, a blower-type mask must be worn.

Where a man is required to go inside of closed vessels, such as the wash boxes of water gas machines and scrubbers or other purifying apparatus, even though (Continued on page 76)

No Leftovers

● "We use all of the pig but the squeal," is an often quoted boast of the meat packers. The gas business can go them one better. For, though you might think there is nothing left of natural gas after it is burned, use has been found even for the invisible "leftovers" that usually go up the flue. Carbon dioxide gas, normally a waste product remaining after natural gas is burned, is used in the softening and purification process employed by the Metropolitan Water District of Southern California. —Southern Counties Gas News.

"Musts" for Postwar Home Service

**Solid war achievements make
home service potent weapon
for protecting and building
domestic gas load tomorrow**

BY W. D. WILLIAMS

*Public Service Electric and Gas Co.,
Newark, N. J.*

THE American gas industry's contribution to the war effort has been one of outstanding achievement. Recognition has come from many quarters, and we who are associated with it are justifiably proud that we were able to meet the test.

Tucked away in the departments that comprise this great industry is one known as "Home Service." Its value to the industry is peculiarly contradictory. It reaches the zenith in some companies through large well-trained staffs completely backed by management, while in other companies its existence is a dim light in the future. In between there are companies who nurture it by passive cooperation, while in others it survives through mere toleration. But tomorrow the picture must change and today is the time to plan for this change.

The gas industry must unite wholeheartedly in recognizing home service not only as an outlet for engendering good will, not only as a department existing to increase load, but an important, competent and authoritative staff whose main function will be to assist in the protection and maintenance of our base load, namely, the cooking load. Management must take



*Home calls to follow up gas range sales
will prove profitable in postwar period*

leadership in acknowledging home service through active, interested co-operation and participation in all home service functions. Any other policy is consorting with complacency and depreciating the "bird in the hand."

The selection and training of salesmen for appliance selling is receiving wide attention from the industry. There is no question of the need for such program. But some thought should be directed to the selection and training of home service personnel. Considering selection there is just one point to be made here. All home service personnel should be graduate home economists. It is too important a job to be left to untrained hands. Graduate home economists speak with authority and bring prestige to the company they represent. They are accepted in any community as professionals.

The preparation and preservation of food are sciences that require a background of study. Therefore we should not appear before homemakers with supposed technicians who have had little, if any, educational standards to support the job they are trying to do.

We would not think of sending a man out to read a meter if he had never been taught how to do it. So why compromise the Home Service Department? Employ only graduate home economists.

One of the problems of maintaining a Home Service Department is retaining personnel. In normal times the turnover is relatively high because of reasons which are quite obvious. Since the war, however, the problem has become more severe. Many companies are operating with staffs that are far below their normal complement. We are referring, of course, to companies whose policy did not include a curtailment of home service activity.

There is little that can be done in the way of reducing turnover in this department because employment is usually terminated by a change of jobs or marital considerations. However, you can minimize the problem of turnover by employing a system that will assure you of immediate trained replacements.

Training Personnel

Perhaps the best way to explain this system is to relate its operation in my own company. We are constantly appraising our staff to determine which ones are most likely to be leaving. Naturally those who have recently married and whose husbands are not in the armed forces are considered critical. We have a fair idea at all times of the number of vacancies that will occur in the next 6 to 12 months.

The next step is to see that we have a sufficient number of girls in training to be ready when vacancies occur. This is handled by deciding at the beginning of each year how many possible replacements will be needed and securing employment authorization from management. About the middle of March we write to a number of colleges who have Home Economics departments, stating that we have vacancies and would be interested in interviewing June graduates who live in New Jersey. This plan has produced a large number of applicants—the war years being no exception. After final selection has been made, the training period begins.

The training of home service personnel seems to have received little

industry attention. It is falsely assumed that because a girl has a degree in home economics or has been identified with food preparation she automatically qualifies and needs little training. Naturally one who has had previous utility experience needs less training than the young lady who has just been graduated. But the point to be made is that every company should have an organized program for training home service personnel. The young lady you are hiring is going out to meet your customers. She faces all kinds of questions concerning utility service. Many of these questions may involve company policy. Others will probably require a general knowledge

during her training she has no customer responsibility.

The training we give to the newly graduated home economist is as shown below. Naturally the program is accelerated somewhat when we employ an experienced worker.

At the end of the training period the junior is assigned to a district and given the responsibility of carrying on home service activities.

This initial training should be only the beginning. Refresher courses should be given at periodic intervals on various phases of home service activity. Home service should be represented at meetings outside the industry that are concerned with problems of home

of the opinion that she knows all about cooking—both preparation and preservation; all about appliances; is expert at lecturing; can handle any complaint; is fully conversant with company policies; and is a whiz at kitchen planning. In combination companies she is also a lighting genius; knows all the laundry problems; is a specialist with respect to adequate wiring and the various uses of small electrical appliances. This most astounding person accomplishes the foregoing with little, if any, training. It may be, but I doubt it.

Home service activities will have to be broadened in the postwar years. Ideas that were sound in the past will have to be modified. New generations bring new demands and utility home service departments will have to keep pace. No doubt some of you have postwar plans all set for release and perhaps some of the thoughts to follow are already incorporated.

One activity that can be expanded profitably is the home call in follow-up of a gas range sale. This type call today amounts to the home service girl's calling on the customer to explain the care and use of the range, leaving a few recipes, and moving on. Most of what the customer has been told is in confirmation of the original story she heard from the salesman and is contained in the instructions issued with the range. It would appear that



Home service girls of The Ohio Fuel Gas Company, Columbus, give wartime pointers on home canning to hundreds of people in widely scattered communities in this Traveling Canning Clinic

of departments other than her own. And it is contended here and now that a two-week training program, whether for the experienced or new home economist, falls short of preparing her for the job to be done. Exposure to company policy and to other departments is also a weak substitute for adequate training.

When we hire a home economist she is immediately assigned to a district office and works under the home economist in that district. She is considered a "junior" and understands that her assignment is purely for training. The term "junior home economist" is used for differentiation only. In the eyes of homemakers she is a qualified home economist. There is little chance of company embarrassment, however, for

service. This constant training is necessary if you are to have an alert, informed staff.

Home service problems are always changing. For example, take the frozen food picture. Your home service personnel will be called upon to give information to homemakers on this method of food preparation. It's up to you to see that they receive the necessary education, now. Another activity of home service will be kitchen planning. All the industry is vitally interested in the postwar kitchen. In almost every company plan, the Home Service Department is going to play a part, but little, if anything is being done in the way of training.

The home service girl is most unique. In some cases management is

SCHEDULE OF TRAINING FOR HOME SERVICE CONSULTANTS

GENERAL OFFICE

1. General Training Program
2. Appliance Training ½ month

DISTRICT OFFICE

3. Company Policy and Procedure ½
4. Appliances 1½ months
5. Home Calls 2 months
6. Contact Work 1 month
7. Lectures 1 month
8. Lecture Demonstration 2 months
9. Office Routine 1 month
10. Recipe Writing ½ month
11. Recipe Testing ½ month

Total Time 10½ months



Postwar dealer plans call for more cooperation from gas home service departments

this type call, as now performed, is of questionable value beyond good will consideration. But this call, under fuller exploitation, can become a definite factor in the maintenance of the gas cooking load.

In making this type call, postwar, why not have Mrs. Purchaser invite some of her neighbors and friends over to see Home Service demonstrate her new CP gas range? What a wonderful opportunity to show cooking vegetables with less water; low temperature roasting; demonstrating the simmer-save burner; and explaining the "easy to keep clean idea." It need not be a lengthy call or weighted down with cooking. This expanded call now becomes very valuable for we are reaching, in addition to Mrs. Purchaser, five or six women who probably are cooking with old-fashioned, inefficient ranges. We are reaching them unoffensively with the story of the modern CP gas range. We have been trying to do this very thing through other mediums with the expenditure of thousands of dollars. Here is an idea worth further study.

Postwar dealer plans should call for more cooperation from home service. We all recognize that competition from electric cookery will be keen after the war. Dealers in your territory will be offered many inducements to promote electric ranges. No doubt your plans for dealer cooperation are

studied with incentives to promote gas ranges. Let's go a step further and give them real home service help.

In the past some of us have had dealer plans involving home service but most of them were inefficient. Draft a positive plan and present it to your dealers. Have your Home Service Department follow up his new CP range sales. Agree to handle his cooking complaints. Furnish him a lecturer for demonstrations he can arrange. Show him that you recognize him as an ally and not as a competitor. It is true that this will require larger home service staffs. But the expenditure of a few thousand dollars now in maintaining load appears more economical than the expenditure of many thousands later attempting to regain this load.

Previously we mentioned the modification of some home service activities for postwar years. One that should receive your consideration is the large cooking school. In the past, the cooking school was a successful venture. The mere mention of the idea was sufficient to insure a large attendance. But today and tomorrow it will be a different story. Attendance will be at a minimum. Recall your own experiences these last few years. Despite intense promotion, audiences have been very small. Why? The answer is simple; competition for the homemaker's time.

First and foremost you are battling radio. You are competing with "John's Other Wife," "Martha Dean," the "Mc Cann Pure Food Hour," and several others. You are competing with the women's magazines who, in the

past few years, have developed excellent food sections. You are disrupting the household schedule. Why should Mrs. Homemaker swelter in the summer months rushing to a Canning Demonstration at P. S. No. 8, or freeze in the winter hurrying to hear about oven meals, when she can sit in the comfort of her home and obtain the same information.

Television will be here immediately following the war and Mrs. Homemaker will not only hear but see the cooking demonstration right in her living room.

There are exceptions to all rules and it is very probable that Stillwell, Wyoming (if there is such a place) will be able to put on large cooking schools with large attendances, but the odds are heavily against it.

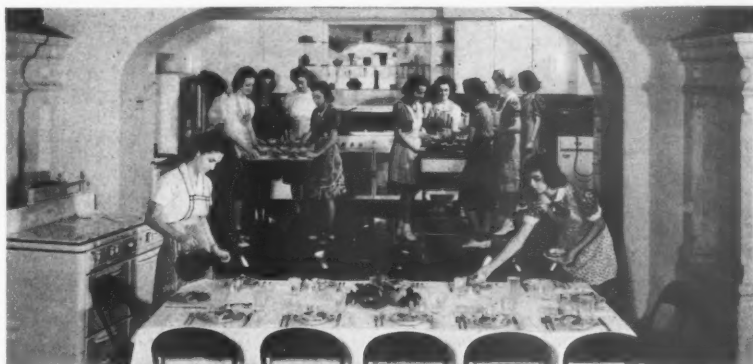
A recent consumer test conducted by the Homemaker's Guild of America* asked the following question: "How Can Professional Home Economists Be of More Help to You?"

Here were the answers:

- 67.4% Newspaper and Magazine Articles
- 23.7% Radio Talks
- 6.9% Cooking School Lectures
- 2.0% Public Utility or Department Store Lectures.

That is the way Mrs. Homemaker is thinking.

It is not inferred or implied that the lecture-demonstration for the Women's Club, P. T. A. or other allied groups is to be forsaken. On the contrary, this activity will continue to be a postwar "must." Its desirability is beyond question. The conditions governing



Greater attention to young people's groups such as this Senior High School Cooking Club sponsored by the San Antonio Public Service Company in Texas will do much to sell gas service

* The Homemakers' Guild of America is an organization engaged in consumer research sponsored by the Owens-Illinois Glass Company. Approximately one thousand women consultants have been scientifically selected to represent a cross-section of the American public. It is well to realize that the proportion of consultants from rural areas would not have easy access to utility lectures.

this type presentation are vastly different from the cooking school idea.

The results of the Homemaker's Guild Survey should further establish the value of bill stuffers and other home service distribution pieces. You are giving homemakers what they want. The postwar trend should be toward more elaborate distribution pieces. You all know of the tremendous success of the A & P's "Woman's Day." In my own company we started a few years ago with an 8½ x 11 recipe sheet, called the Home Economics News. The original circulation was about 12,000. Today this has grown to an eight-page bulletin with a circulation of 100,000 monthly. If it were not for paper shortage, the circulation would be 200,000.

Here are some ideas for postwar distribution pieces that have appeal and will help your gas load:

1. Cookie Booklet
2. Teen Age Cook Book
3. Party Recipes
4. Casserole Cookery
5. Bride's Cookery Manual

To explore just one, let us consider the Bride's Booklet. This could be a simple booklet giving the definition of various cooking terms and a few basic recipes. It could be sent to each bride in your territory with a congratulatory letter from home service. This appears to be an excellent way of introducing



A striking poster in Pittsburgh goes on record about the overwhelming popularity of gas cooking in that industrial city. It is part of a cooperative promotional program of the local utilities.

"gas company service" to a new customer. Think it over.

Some companies have large sections of their territories that are predominantly Italian, Polish, or comprising other nationalities. Home service activities in these areas have been definitely limited. The reason being that these customers are somewhat skeptical of those who do not speak the mother tongue. This condition should be corrected postwar. In the interest of complete and adequate coverage, home service should be represented in these areas with someone who talks the language. This group is usually in the low income class and is in need of home service help much more so than the Women's Club or P. T. A.

During the war years, many homemakers have turned to utility home service departments for help. Requests for nutrition courses, canteen courses,

lunch box suggestions, information on food substitutes because of rationing, canning help, and advice on the care and use of appliances are some of the highlights that have been encountered. We have been sought out by the Red Cross, A. W. V. S., Extension, Victory Garden groups, the Federal Security Agency, the War Food Administration and others. Club groups we could not reach before, requested our services.

The foregoing attests to two things:

1. The job home service has done during the war
2. The recognition it has been afforded.

For tomorrow, home service is one of your strongest weapons in protecting and maintaining the domestic gas load. Everyone else has used it, how about you?

Cooking Schools Real Melting Pot

● "The mink coat crowd is taking cooking lessons while its cooks—if it can get them—are indulging in riding lessons," declared one efficient cooking instructress in summarizing the present surge of interest in practical cooking and nutrition courses.

A survey made January 10 by *The New York Times*, however, revealed that every age and economic group, as well as both sexes, is widely represented in the numerous classes currently being conducted by department stores, utility companies and community organizations to meet the overwhelming demand for food instruction—

from dishing out a plain omelet to the complexities of caloric values.

The most prominent group, from the point of view of numbers and eager interest, instructors reported, is that made up of service men's wives and fiancées, who are anxious to put on a good show when their men come back, and at the same time to learn to wring from limited allotments a sound, healthy diet.

The Ballard School, under the auspices of the Young Women's Christian Association, conducts evening classes in elementary and advanced cookery for groups of twenty students who receive a large dose of practical nutrition along with essential cooking techniques. Similar classes are held by the Brooklyn and New York chapters of the American Red Cross for small groups in their own buildings and in neighboring health centers and schools. The Brooklyn chapter also conducts a cooking class for children between the ages of 10 and 15 in which, it seems, the boys are particularly adept.

The Cordon Bleu Cooking School, famous for its de luxe recipes in London and Paris, reports that it has maintained capacity classes of eight since it was opened three years ago. At \$5 a lesson (and \$7.50 if you eat what you cook), the clientele, presumably, is motivated by the interest of the gourmet rather than by dire necessity.

Among the institutions that conduct cooking demonstrations for large groups, Consolidated Edison reports an increase of 30 per cent in attendance during the last year, 76,000 persons having attended its 1,400 lectures. Gertrude Hayden, at Macy's Home Center, demonstrates to about 150 men and women every afternoon in the center's red and white kitchen, and says her audience has doubled during the last year.

The New York State Emergency Food Commission last year began its Wartime School for Housewives with a flexible program designed, as its name suggests, to instruct housewives when an emergency arises in the market.

House Heating Diversity*

Study of heating load characteristics in Philadelphia yields valuable guides for planning postwar expansion

BY H. L. ROBBINS

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and

NEWTON CROLL

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GAS house heaters were first introduced in Philadelphia between 15 and 20 years ago but by 1939 their number had only increased to four thousand installations. Since there are close to 500,000 customers in Philadelphia, it is obvious that this volume of house heating did not too seriously affect the demands on nor the planning for distribution mains, transmission mains, pumps and plant. This was particularly so since, as was probably true in the case of most gas companies at that time, there was a substantial margin in capacity.

In 1939, however, as a result of a further reduction in rates for house heating gas, plans were laid for selling a considerably increased volume of gas house heaters. Faced with the prospect of planning to supply this volume, the question naturally arose as to what were the load characteristics of gas house heaters, such as the maximum hour demand, the demand at the time of our system peak (5 to 6 P.M.), the number of burning hours for given temperatures, etc.

A check of the literature indicated only a limited amount of information was available, and we had no such data ourselves. Since it was clearly of

*"Diversity" is defined as the relationship of the amount of gas used at any one time by a group of appliances to the maximum amount of gas these same appliances would have used had all of them been burning at the same time the full amount of gas for which they were adjusted.

the greatest importance to know the characteristics of this load in order to properly plan development of plant, it was decided to obtain the necessary metering instruments, select suitable locations and make appropriate studies of gas usage by house heating equipment.

The sites selected for the study were from those larger groups of houses in Philadelphia with 100 per cent house heating whose layout was adaptable

for or could be accommodated to single-point metering. It seems reasonable to say that the occupants of all situations studied were in the middle to lower income groups. For future reference in this article, the four situations used in this study are summarized in Table I.

Sites "A" and "B" were built by established builders and represent the type of house being built in Philadelphia before the war, as far as general construction, insulation and capacity of heating installation go. Figure 1 shows houses studied at Site "B." As may be seen, they are 2-story, row houses with brick construction front and rear. Side walls are of cinder block; foundations are of concrete. These houses have the living room, dining room and kitchen on the first floor; three bedrooms and bath on the second floor; full-sized



Figure 1. Two-story row houses of brick construction were the subject of study at Site "B"



Figure 2. Multi-family building projects such as were investigated at Site "C"

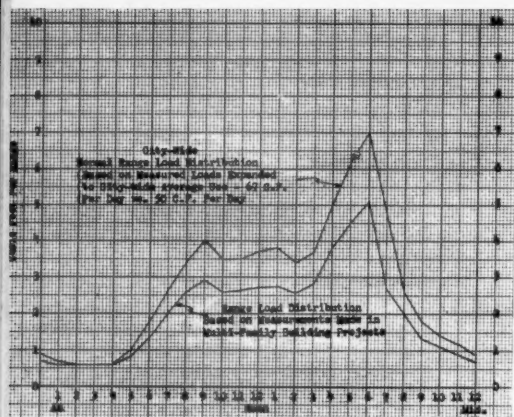


Chart I—Winter weekday range load distribution at normal temperatures

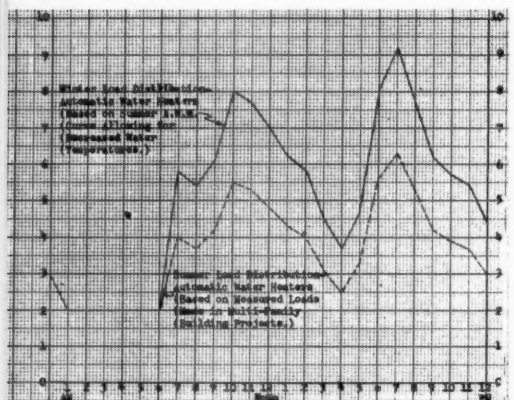


Chart II—Winter load distribution—automatic water heaters

basement containing garage. They are 16 feet wide and 32 feet deep.

Sites "C" and "D" are multi-family building projects. Both represent a good type of basement-less, 2-story construction. Figure 2 shows the type of building studied at Site "C." These are built of single layers of 8-inch cinder blocks and contain a living room, utility room, and combination dinette and kitchen on the first floor, with two (and three) bedrooms and bath on the second floor. The houses are 15½ feet wide and 26 feet deep.

Temperatures carried in these groups were sampled, at which time it was found that, where customers pay their own bills, they carried an average daytime temperature of 72.6°. As might well be expected, where the bills are not paid directly by the customer, the average daytime temperatures carried were higher—76.2° at one side and 75.5° at another. In one of these latter cases, the customers paid their pro-

portionate share of the total gas bill; however, this seemed to have no more effect on tendency to economize by carrying lower temperatures than if heat were included in the rental figure. There was some considerable evidence from the charts that the practice of making night set-backs was not uniform. It is assumed that, in these cases, because of lack of incentive to economize, high temperatures were carried at night even though bedroom windows were opened.

Plain thermostats without clocks were in use in all houses studied. However, it is believed that, in cold weather, the presence of clock thermostats would have little effect on A.M. diversity and none on P.M. diversity. There is considerable variation between customers' habits, with respect to the time at which people set clock-controlled heaters to come on; and further, even though the time-settings were more uniform, substantial diversity would be created through the operation of limit controls, combined with the fact that in any group of heaters, there is material variation between the ratio which the heater output bears to the heat loss of the houses. In any case, the bulk of equipment sold in recent years, and now being sold, has plain thermostats.

In developing our figures we were somewhat concerned with the fact that three out of four of the projects studied were made up of less than 200 dwelling units each, which number we thought might well be below the point at which maximum diversity is reached. Because of this concern, we studied the relationship between the diversities of the different projects, after correcting the figures for the variations in inside temperatures carried, and in the ratio between heat output of the heater and heat loss of the house. Our studies indicated that be-

tween 60 and 160 dwelling units, there was virtually no difference in diversity, nor any significant increase up to one thousand dwelling units. This leads us to believe that at approximately 50 dwelling units, a reasonably diversified condition is reached, for purposes of studies of this sort, and that certainly when the number exceeds 100, we have, for all practical purposes, reached maximum diversity.

After studying the data of all the projects in question, it was decided to use "Site B" information, where 162 heaters are in use, as the basis for the greater part of the heating data here presented. The circumstances present in this project are more nearly typical of the average building operation and the data can, therefore, properly be used in drawing conclusions with respect to a postwar building program. It is true that during the heating season (1943-1944) for which we have data at this location, there were no very cold days, the minimum hourly temperature being 14°. Nevertheless, the shape of the diversity and burning hour curves developed for Sites "A" and "C," where cold weather observations were secured, were so similar to those for Site "B" that we have confidence that the method used in interpolating the Site "B" results is substantially accurate.

Metering Methods Used

Two types of instruments were used to gather data for this study. One was General Electric demand attachments for use in connection with low pressure positive displacement meters. This device gives a weekly chart on which a stroke is made every half hour, the length of the stroke indicating the cubic feet of gas used during that half-hour period. Corrections for temperature were made to these readings;

TABLE I

Site	Living Quarters	H.H.	Range	A.W.H.	Ref.	Other Appl.	Pay Bills	Type Heat	Avg. B.t.u./Hr. Heat Loss 0°-70°
A	46	46	46	46	46	None	Yes	Hot Water	39,542
B	162	162	162	27	17	133*	"	Gravity W.A.	32,405
C	64	64	64	64	64	None	No	Forced W.A.	30,996
D	1,000	1,000	1,000	1,000	None	"	"	"	46,995

* Manually operated water heaters.

TABLE II

Site	Period of Test	Temperature Conditions			No. of Days Temperature Averaged under 25°
		No. of Days	Lowest Daily Avg. Temperature	Lowest Hourly Temperature	
A	Feb. 9 to Feb. 18, 1943	9	7.2° F.	3° F.	4
B	Dec. 18, 1943 to April 30, 1944	134	21.0° F.	14° F.	8
C	Dec. 9 to Dec. 30, 1942	21	7.3° F.	2° F.	5

however, corrections for gas pressure and barometer were not made in view of their relative insignificance.

The other instruments used were American Meter Company orifice meters; one designed for a pressure from 0 to 10 lbs., and the other for low pressure (approximately 5 inches water pressure). Corrections for both temperature and specific gravity were made to the readings of the orifice meter charts. Considerable thought was given to the question of a correction for water vapor on both types of instruments, but this was finally disregarded since it proved not to be of sufficient magnitude on winter readings.

Since our experience with orifice meters had been quite limited up to the time of this study, we made a check of orifice meter results against positive displacement meter results. Fortunately, one installation provided ideal means for making this check against a battery of positive displacement master meters. The results of several checks showed accuracies generally within the range plus or minus 2 percent. The accuracy of each chart from the General Electric demand attachments was established by comparing the chart total with the total meter registrations for the same period.

Range and Water Heater Consumptions

The chart data, after correcting for the various factors discussed above, yielded the total amount of gas consumed hourly for all purposes. To obtain the gas used for house heating, it was necessary to deduct an allowance for the other appliances in use. The data on cooking and automatic water heating were obtained from actual measurements of these loads made at three multi-family building projects, the smallest of which included 250 customers.

In two of these projects, ranges were the only gas appliance in use, so that it was an easy matter to compute the hourly domestic range usage. However, obtaining data on automatic water heating consumption was not quite as simple, since we had no project where gas automatic water heaters only were installed, nor had we one where ranges and automatic water heaters were the only gas appliances in use. The nearest approach was to make summer-time measurements on the 1,000-unit project, using gas for three domestic purposes—cooking, water heating, and space heating. By deducting the summer range load obtained from the other two projects, we were thus able to arrive at the characteristics of the summer automatic water heating load.

After obtaining the measured summer loads, we then expanded them to winter-time conditions. The range load was expanded to conform with the actual temperatures which occurred during the periods of the tests, on the basis of a proven temperature correction formula in current use by the company. Before expanding the summer water heating load, we first allowed for the relative constancy of standby loss, expanding the balance of gas consumed in proportion to the decrease in water temperatures during the winter months. All results were subsequently checked with city-wide curves, as well as monthly gas sales. (See Charts I and II.)

Weather Conditions

Temperature—Table II summarizes the lowest temperatures which prevailed during the periods of the three house heating tests. In connection with the two days where the temperature averaged under 8 degrees, it is worth noting that there have been only ten days since 1905 on which the temperature in Philadelphia averaged 10 degrees, or less. Of interest also is the

fact that the coldest day in the history of the Philadelphia Weather Bureau occurred on February 9, 1934, when the mean temperature for the day was zero and the low hourly temperature was 11 degrees below zero.

We have not attempted to measure the effect of wind and snow on house heating demands, which factors probably explain to some extent the dispersion of the points shown in Chart IV. In studies of system sendouts, we have noticed that high winds can have as much effect as a 4 or 5 degree drop in temperature; whereas fresh snow has the opposite effect, by weather-stripping windows and insulating roofs. To measure the extent to which these factors affect gas heating demands would involve a study of the effect of winds at various velocities, as well as direction, and the effect of snow at various depths. Unfortunately, we lacked sufficient data from which we could draw definite conclusions. Some allowance was, however, automatically made for high wind on cold days, in that all the coldest days were accompanied by a hard north wind (which is usually the case), and, in drawing the slopes of the various curves, due weight was given to the higher diversities on these days.

Standard-Design Temperatures—For use in planning system plant and dis-

Chart III—Diversity for a high A.M. hour vs. temperature

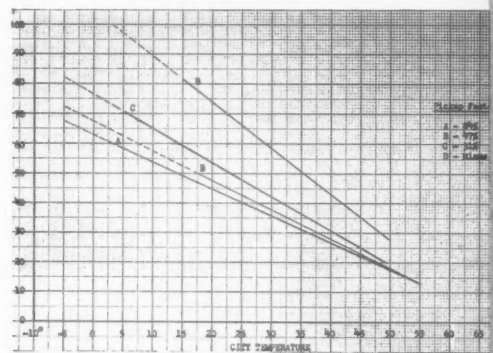
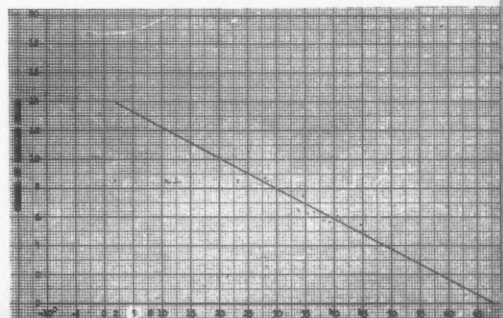


Chart IV—House heater burning hours per day vs. average daily temperatures



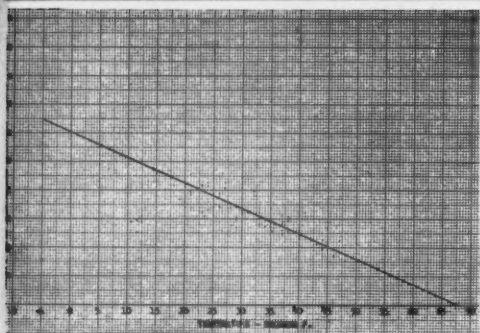


Chart V—House heater diversity vs. temperature 8 to 9 A.M.

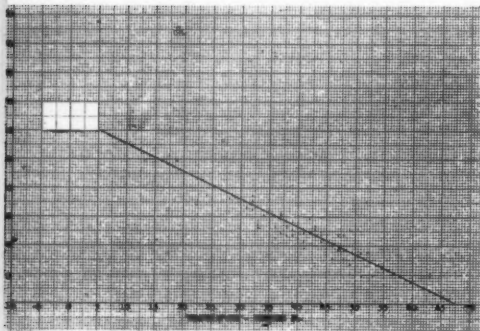


Chart VI—House heater diversity vs. temperature 5 to 6 P.M.

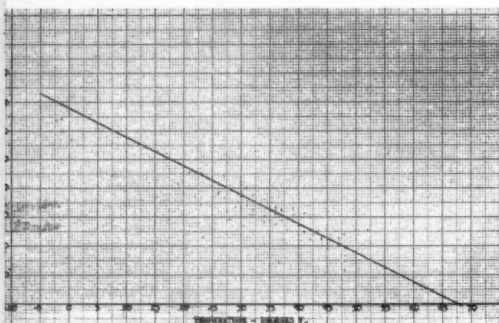
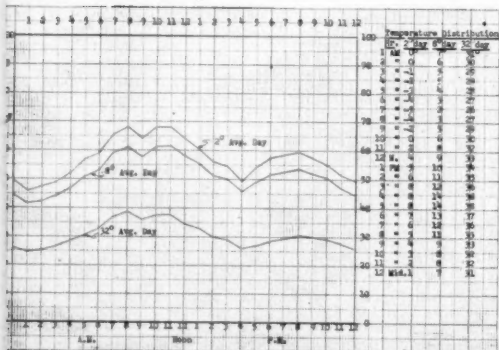


Chart VII—House heater diversity vs. temperature 10 to 11 A.M.

Chart VIII—House heater diversities for standard cold days (Note: The peak diversity of 68% at 10-11 A.M. is for a temperature of zero. Should the standard minimum temperature of 5° below zero occur at 10-11 A.M., the peak diversity would be 73%.)



tribution requirements for various levels of house heater saturation, we have adopted the following standard minimum temperatures, which are based on a study of Philadelphia temperatures since 1874:

1. For forecasting load in planning production plant, an average temperature of 8 degrees F., for any 24-hour period.

2. In planning for equipment where the peak hour is a consideration, a minimum A.M. temperature of minus 5 degrees F.; and a 5 to 6 P.M. temperature of plus 8 degrees F.; the day to average plus 2 degrees F.

The basis for the adoption of a warmer day as the standard to be used in planning for production plant is that the difference in sendout between this day and a moderately colder one can be absorbed by drawing on holder stocks. The study of temperatures in Philadelphia indicates that the possibility of colder than eight degree weather lasting for more than two to three days is too remote to be considered in such planning.

Results

Below are given the major conclusions reached as a result of a study of the data secured, together with charts illustrating, and giving the basis for, these conclusions.

Standard Hourly Diversities

Perhaps one of the most important conclusions to be reached is with respect to the diversities which should be considered in planning distribution and transmission equipment. As a result of the study, we have adopted standard maximum diversities of 75 per cent (at -5°) for the morning peak and 55 per cent (at 8°) for the afternoon peak hour, for the standard 2° average day for which we must plan.

We recommend the adding of 5 per cent to our standard diversity figures in all cases where customers do not pay their own heating bills; that is, either to the company direct or to the landlord based on readings of a deducting meter. Throughout this entire study, we have observed a distinct

¹ Pick-up factor is expressed as the percentage by which the heater output exceeds the heat loss of the house, at zero to 70 degrees.

tendency toward higher figures in both diversity and burning hours in such cases. As stated earlier in this article, the fact that they had to pay their proportionate share of the entire heating bill seemed to be no inducement for economizing.

Burning Hours

Chart IV was prepared to illustrate the data accumulated on burning hours per day. Fourteen burning hours have been adopted as the standard for a 2-degree average day and 12½ burning hours for an 8-degree average day; assuming satisfactorily designed heating systems.

There are two factors which go to keep these figures well below what might be expected—the allowance usually made for "pick-up"¹ in sizing heating equipment (to be discussed below), and the heating effect of other gas appliances. This latter factor has a material effect in houses of the size under study.

Pick-Up Factor

An interesting relationship was developed between diversities (and consequently burning hours) and heater outputs compared to heat losses of the dwellings being studied. In the situations studied, this factor varied from an excess of 84 per cent to a minus of 10 per cent. Accepted percentages for pick-up factor undoubtedly vary in different localities and according to individual opinions. "Comfort Heating," issued by the American Gas Association in May, 1939, recommends 20 to 30 per cent, depending on size of installation, for warm air jobs, and as high as 70 per cent for hot water. "Heating and Ventilating Air Conditioning Guide," 1940, recommends 20 per cent for steam and hot water installations.

Chart III shows rather completely the effect on diversity of heaters with too low and too high input ratings. It is interesting to note the extension of Curve "D" to 0° gives a diversity in excess of 100 per cent, as would be expected in view of the minus pick-up factor. Such a house would never reach a temperature of 70° in zero weather. We believe the diversity relationships in these four situations indicate that

the pick-up factor is the principal thing in determining diversity results, at any given temperature.

Diversities for Important Hours

In addition to the design diversities developed, and the data on burning hours, it was considered to be of value to determine the characteristics of diversity for different temperatures and different hours of the day. Charts V, VI, and VII are the basic curves developed from the test data for the three important hours of the day,² i.e., the 8 to 9 A.M. and 5 to 6 P.M. hours (the hours which coincide with our A.M. and P.M. residential peaks) and the 10 to 11 A.M. hour, the peak for heating only. These curves indicate that for any given hour there is a positive and linear relationship between outside temperature and diversity.

Basic curves were similarly developed for all the hours of the day. From these basic curves, the charts and conclusions presented below were developed:

Diversities for Standard Days

Chart VIII shows house heating diversities by hours for the two standard days, averaging 2° and 8°, as well as a 32° day (the normal winter's day in Philadelphia). These curves are based on hourly temperature distributions most likely to yield these average daily temperatures. In referring to this chart, it should be noted that the peak diversity at 10 to 11 A.M. is for a temperature of zero. However, since the standard minimum temperature of 5° below zero on the 2° day could occur as late as 10 to 11 A.M., the hour of the peak heating demand, we have, for safety purposes, adopted the 75 per cent diversity, mentioned above, as our standard in the design of distribution facilities.

Diversities by Hours

Chart IX shows the house heating diversities by hours for 5° intervals

² After studying various methods of relating diversity to temperature, it was felt that the most satisfactory method was to plot the observed diversity for any given hour against temperature for preceding hour. This method was used in developing these and the succeeding charts.

³ The other major domestic appliance saturations in Philadelphia are: Ranges, virtually 100%; Automatic Water Heaters, 14%; and Refrigerators, 12%.

of temperature difference. From these curves, it is possible, by interpolation, to develop diversities to fit any set of temperature conditions down to 5° below zero.

Effect of House Heating Saturation on Total Residential Load

In Charts X and XI, we present curves showing the effect of saturation of house heating on total residential load. Chart X shows the residential load curve for this company, without heating, and the effect of including our present house heating saturation of 4 per cent.³ Chart XI shows a constructed load curve for 100 per cent saturation of cooking, automatic water heating and house heating. It is to be noted that the morning peak on a mid-winter holiday, when the cooking peak and the heating peak tend to coincide, surpasses the weekday evening peak by 18 per cent. Both of these charts show the excellent effect on daily load factor resulting from the introduction of gas house heating.

Shifting of the Residential Peak

On a city-wide basis, the shifting of the hourly peak residential demand should be of little significance, since it would require a house heating saturation of 26 per cent on a weekday, and 11 per cent on a mid-winter holiday, before such a shift would take place. Even if this volume of house heating were feasible (119,000 and 52,000 house heaters, respectively, for Philadelphia), the taking-on of a load of this size would probably be prohibitive from an economic standpoint under present rate structures.

On the other hand, in any transmission district or distribution area, the shifting of the peak residential demand to the morning hour could readily occur, and must be taken into account in the design of transmission and distribution facilities. Particularly is this true in the sections of the city where the input per heater is substantially greater than our city-wide average of 207 cubic feet per hour, on which the above conclusions are based. For example, in one of our peripheral transmission districts, the input per house heater averages 570 cubic feet per hour. At this input, the peak hourly residential demand would prob-

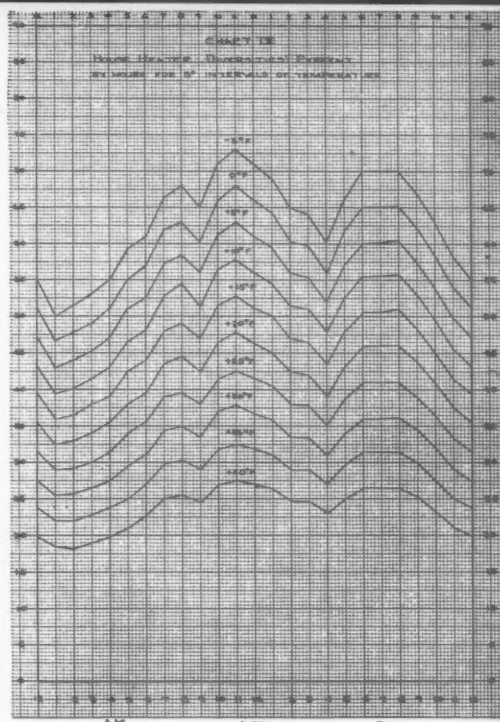


Chart IX—House heater diversities per cent by hours for 5° intervals of temperature

Chart X—Effect of present 4% house heating saturation on city-wide residential load

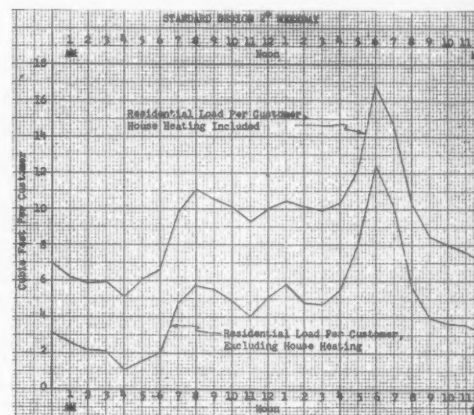
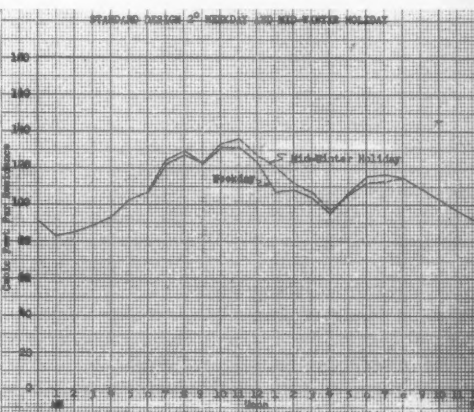


Chart XI—Residential load curve—project using gas for cooking, automatic water heating and house heating



ably occur on a weekday morning with a house heating saturation of only 9 per cent, and 4 per cent on a mid-winter holiday, such as Christmas Day. For other sizes of house heaters, the approximate saturation points at which the shifting of the peak hourly residential demand would occur are shown in the following table:

Average Input Per Heater C.F. Per Hour	House Heating Saturation Required to Shift Peak Residential Hourly Demand from P.M. to A.M. Hourly Temperature —50°	
	Weekday	Mid-Winter Holiday
150	35%	15%
200	26	12
250	21	9
300	18	8
350	15	7
400	13	6
500	11	5

Such a morning peak might take place at any time between 8 and 11 o'clock.

Relation of 15-Minute to Hourly Peak Demand

In this study, we also attempted to analyze the relationship between the 15-minute peak demand and the hourly demand, to see whether temperature had any effect on this relationship. It was quite evident that temperature had

little, if any, effect. The only conclusion that could be drawn was that the 15-minute peak is, on the average, 5 per cent higher than the hourly demand. We include this, since the 15-minute peak has significance in the design of certain distribution facilities.

Conclusion

We believe that the data covered in this report permit the reasonable deduction of the guides indicated for the more important planning that has to be done in connection with the taking on of a substantial house heating load. Nevertheless, we believe that we can usefully accumulate and interpret still further data and intend so doing. In addition, it is obvious that the utility of any information and conclusions in this report, however valid for Philadelphia, would naturally be confined to not too dissimilar climatic conditions; while the methods used, if considered satisfactory, would be applicable anywhere. Naturally, with the rapidly growing importance of gas house heating as a large volume load, accumulation of more data in more places should be of material value. This article will have served its purpose if its only result will be to stimulate further and more exhaustive research on this subject so vital to the gas industry.

WAR MANPOWER COMMISSION DISTRIBUTES GAS INDUSTRY CASE HISTORY REPORT

FOLLOWING its commendation of the American Gas Association's work in developing gas industry case histories providing valuable manpower and material conservation information, the War Manpower Commission on January 15 distributed copies of this comprehensive report to all holders of its Case History Manual. In addition copies are expected to be distributed to each member company of the Association.

Many methods and devices used by gas companies to conserve manpower and materials are outlined in the report. An idea of its scope may be obtained from the opening "General Statement" which follows:

"A study of the manpower situation in the gas industry during World War II, made at the request of the War Manpower Commission, discloses some most interesting facts concerning the maintenance of satisfactory service in the face of greatly reduced manpower, impossible

to supplement, and a substantially increased use of gas for domestic, commercial and industrial purposes—much of the latter for war industries. Following are the general measures and conditions which made this remarkable performance of an essential service in a satisfactory manner possible:

"1. Increasing the number of hours worked per week.

"2. Greater utilization of mechanical labor-saving machinery and tools.

"3. Elimination or drastic reduction of sales and promotional forces because of the unavailability of merchandise and material. As far as possible these employees were utilized in other company occupations and those who could not be so utilized were assisted in obtaining war jobs in other essential work.

"4. The minimizing of road and building construction and shortage of material and motor vehicles.

"5. Continuous scrutiny of operating procedure and elimination of practices,

reports, forms, etc., not essential to efficient and safe war operations.

"6. Maximum utilization of women on occupations formerly performed by males, such as auto cleaners, office "boys," elevator operators, apprentice draftsmen, meter readers, apprentice meter testers and repairmen. A more extensive use of women in clerical occupations.

"7. The use of older men where practical.

"8. Male employees under 38 on non-essential occupations, such as elevator operators, porters, etc., were transferred where possible to essential occupations.

"9. Speedup training methods were used, taking advantage of the War Manpower Commission's "Training Within Industry" program, as well as company-developed training procedures, to assure shorter training for replacements and upgraded employees.

"10. A general tightening up of operating procedures to make each man's efforts more effective.

"11. Re-allocation of duties and increase of responsibilities on remaining personnel when a department became shorthanded.

"12. Acceptance of more responsibility and more duties by department heads, supervisors and executives.

"13. Efforts to reduce absenteeism by stressing importance of regular attendance to the war efforts, using nursing services, making cold medicine available, improving office temperature and ventilation, etc.

"At the beginning of the war most gas companies had well-balanced and capable personnel and physical properties in excellent condition. Operating practices had been developed along sound and modern lines. The companies were well prepared to assume the added burdens imposed on them by the war effort. The reason for this was efficient management and it has been that same efficient management which has enabled gas companies to maintain satisfactory gas service in spite of a reduction in manpower of more than twenty per cent."

Mid-West Meeting Off

CA. BLAND, president, Mid-West Gas Association, announces that the association will cooperate with the government's effort to reduce travel and will dispense with its annual convention previously scheduled for Omaha, Nebraska, in April.

Turnover

● Experiments should be made in human research to alleviate turnover of salesmen, which averaged between 1925 and 1939 over 380%, and of house-to-house canvassers, which averaged during the same period up to 1,400%, in the opinion of Dr. Samuel N. Stevens, president of Grinnell College in Iowa.

RADIO FREQUENCIES FOR GAS UTILITIES PROPOSED BY COMMUNICATIONS COMMISSION

COMPLETE information regarding proposals of the Federal Communications Commission to allocate radio frequencies to gas and other utilities was released January 16, 1945 and is available in Docket No. 6651 covering the spectrum from 10 to 30,000,000 kilocycles, obtainable from the Commission at Washington, D. C.

The Commission proposes that the following number of channels above 25 mc be allocated for the use of electric, gas, water and steam utilities on a shared basis with petroleum and other services:

Frequency range	Number of channels
25 to 44 mc	15
156 to 162 mc	5

In addition, in certain areas provision may be made for the use of channels shared with television in the range 44 to 78 mc and 192 to 204 mc. These channels should be adaptable to emergency point-to-point use without harmful interference through use of directional transmission and reception.

The band 940 to 960 mc may be used for low power fixed point-to-point control circuits, etc., on an experimental basis pending adequate showing as to need and technical requirements.

The following bands of frequencies are also available for assignment on an experimental basis pending adequate showing as to need and technical requirements:

1900—2300 mc
3900—4550 mc
5750—7050 mc
10500—13000 mc
16000—18000 mc
26000—30000 mc

It is believed by the Commission that the proposed allocation will provide an adequate number of channels for the immediate postwar needs of electric, gas, water, and steam utilities, particularly if the channels in the VHF range are used wherever possible for fixed point to mobile communication and vice versa. By the use of appropriate equipment some of the available bands of frequencies in the ultra high frequency range may be developed for point-to-point emergency communications.

It is also proposed that channels assigned for the use of electric, gas, water, and steam utilities be shared with the petroleum industry. Since the most congested areas of operation of the petroleum industry are geographically separated from the most congested areas of the above utilities, it is believed that channels may be shared without undue interference.

Due to the heavy demand for frequencies in the range 25 to 300 megacycles it has been impossible to allocate all the channels requested in this range. The channels proposed to be allocated, however, represent a very substantial increase over the 13 chan-

nels now available for the use of utilities in the special emergency classification.

Inasmuch as it has been proposed that exclusive channels be assigned for use by the electric, gas and water utilities, at least in a particular area of operation, and in view of the estimated postwar growth in the number of transmitters which will be used by these utilities, the Commission will give appropriate consideration to the request that a separate classification be established to meet their needs. In connection with such consideration, the Commission will also give due regard to the pos-

sibility of permitting a use of radio by these utilities which is broader in scope than that which is presently permitted under the existing special emergency rules of the Commission, and which will be applicable to any type of utility or company having communication problems similar to those of the electric, gas, water and steam utilities. However, in considering such enlargement of the scope of service, the Commission will necessarily have to examine the number and characteristics of the frequencies proposed for assignment in the light of needs for emergency communication.

Warren T. Bulla, Natural Gas Pipeline Co. of America, as American Gas Association representative, on Oct. 21 presented information regarding the communications needs of gas companies.

GAS INDUSTRY LAUNCHES FUEL-SAVING DRIVE

RESPONDING to a strong appeal of the War Production Board the American Gas Association is participating in a nation-wide drive to secure gas industry cooperation in a new campaign to conserve vital fuels. Following meetings with government officials in Washington and New York, Everett J. Boothby, vice-president of the Association and chairman of the Committee on War Activities, on January 23, addressed the following appeal to A. G. A. members:

"An urgent plea for fuel saving throughout the country has been made by War Mobilization Director Byrnes who has asked the public to limit indoor temperatures to a maximum of 68 degrees. To implement this request, the Office of War Utilities, W.P.B., specifically urges that gas utility companies promptly ask their customers to keep their room temperatures at not over 68 degrees and that the industry take immediate steps to resume its conservation program which resulted in substantial fuel savings in the past.

"The seriousness of the present fuel situation was outlined in detail by Alexander Macomber, Director of the Gas Division, Office of War Utilities, W.P.B., at a special meeting of the Association's Committee on War Activities held January 22. His recommendation that the gas industry take action immediately in respect to its customers was unanimously supported by the Committee and approved today by the Association's Executive Board.

"In view of the urgency of the situation, it is believed that local newspaper advertising offers the best medium for securing prompt action. Suggested material is being prepared

and will be sent to you as soon as possible from Association Headquarters.

"Please forward one copy of each advertisement published by you to the Gas Division, Office of War Utilities, Temporary Building R, Washington, D. C., and one copy to Association Headquarters.

"The gas industry has heretofore given its full support to the Government's wartime fuel conservation programs and we know it will be your intention to do so in this present emergency."

Urgency of the situation was underlined January 20 when Edward Falck, director, Office of War Utilities, W.P.B., wrote Chairman Boothby as follows:

"You are, of course, aware of the nation-wide fuel saving campaign now being undertaken by the Government. In the past, the gas industry has made an outstanding contribution to the war effort through its conservation programs which resulted in substantial fuel savings.

"Natural gas, together with the raw materials used in manufactured gas, are all vital fuels and must be conserved. The cooperation of consumers in this respect also has an important effect on the capacity of our gas systems to meet the demands during peak periods.

"The Office of War Utilities is co-operating with the respective industries under its jurisdiction toward the development and intensification of fuel conservation measures.

"In view of the leadership of the American Gas Association in other campaigns of this nature, it is hoped that the gas industry will take immediate steps to continue its conservation program."

War Displays Win National Recognition

Appealing displays from all parts of country entered in utility bond display contest



UTILITY displaymen have scored again. Hard upon the heels of their successful and widely commended work in the Fifth War Loan Drive, they were called upon to support the Sixth War Loan Drive. That they did so wholeheartedly and effectively was demonstrated in the nationwide contest just concluded by the A. G. A. Residential Gas Section's Window and Store Display Committee. Nine winners in three divisions were selected. Without exception, the scores of displays entered from all parts of the United States were

of a high order and must have stimulated the sale of many War Bonds.

The contest, which closed December 26 and was judged January 5, was divided according to population: Division A for cities of 100,000; Division B for cities of 50,000-100,000; Division C for cities of less than 50,000. Sole requirement was that displays had to feature a \$100 War Bond.

In addition to the six winners mentioned below, third prizes in each division were awarded to Richard A. Mach, Minneapolis Gas Light Co.; F. H. N. Hawkins, West-

chester Lighting Co., Mt. Vernon, N. Y.; and H. O. Whelpley, Pacific Power and Light Co., Yakima, Washington.

Judges in the contest (above, left to right) were: Royal M. Alderman, vice-president, McCann-Erickson, Inc.; Frank W. Williams, secretary, A. G. A. Residential Gas Section; Irma Ericsson, advertising manager, Shulton, Inc.; George W. Browne, chairman, Window and Store Display Committee, American Gas Assn.; and Lawrence Hammond, Radio and Motion Pictures Committee for Economic Development.



FIRST PRIZE—DIVISION A

George H. Schumacher, Milwaukee Gas Light Co., Milwaukee, Wis., \$50 War Bond



SECOND PRIZE—DIVISION A

Vincent T. Nast, Philadelphia Electric Co., Philadelphia, Pa., \$25 War Bond



FIRST PRIZE—DIVISION B

Bryan Butler, Florida Power Corp., St. Petersburg, Florida, \$50 War Bond



SECOND PRIZE—DIVISION B

A. J. Paulhaus, Blackstone Valley Gas and Electric Co., Woonsocket, R. I., \$25 War Bond

FIRST PRIZE—DIVISION C

Carleton F. Bogart, Long Island Lighting Co., Mineola, New York, \$50 War Bond

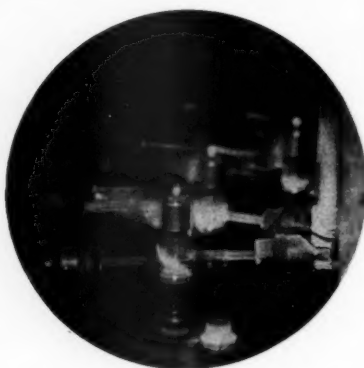


SECOND PRIZE—DIVISION C

M. R. Norton, Wisconsin Power and Light Co., Fond du Lac, Wis., \$25 War Bond



GAS TAKES ITS PLACE ON ELECTRONICS PRODUCTION LINE



Gas at work at R.C.A. in Indianapolis making an electronic tube on a sealex machine

AMONG its many other war jobs, gas is making an important contribution to the production of electronic equipment. Called America's secret weapon by some Allied leaders, the science of electronics has been a potent factor in our military successes. Every ship, tank, gun, airplane and even the men in the foxholes of the South Pacific or the battlefields of Europe depend upon electronics to protect them and carry them forward. Writing in *The Gas Flame*, magazine of the Citizens Gas and Coke Utility, Indianapolis, E. G. Bowman of R.C.A. Victor Division describes the role gas plans in the production of this vital equipment:

Heart of Electronics

"The heart of all this electronic equipment is a tube, tiny tubes as small as a pencil to those several feet long and in diameter. The tube has been described as the magic brain of all electronic equipment. It is that part which virtually performs the miracle of radio and radar, reaching into unseen regions to transmit vital messages or detecting the approach of an enemy aircraft or naval vessel, many miles away.

"In Indianapolis is located R.C.A., Victor Division of Radio Corporation of America, from whose doors millions of tubes have flowed into home radios during peace time and into the channels of war since Pearl Harbor.

"Because of their great importance and the need to have tubes that work unflinchingly with precision-like performance, great care is taken in their manufacture. They are built to withstand the terrific shock of giant guns being fired aboard a battleship; to operate inside a jolting tank and under severe conditions in the stratosphere-flying planes and far below the surface of the sea."

Gas plays a very important part in the manufacture of these tubes. Gas piped from Citizens Gas and Coke Utility is used in tremendous volume at the R.C.A. plant.

During the process of glass tube manufacturing, the glass stems which support tiny but vital electrical parts of the tube, and the completed tube itself are subjected to white-hot temperatures ranging up to 1252° Fahrenheit, in moulding, sealing and baking operations. For this reason any fluctuation in the B.t.u. content will be instantly reflected in the quality of the tube when it gets down to final inspection. It must work perfectly or else it is discarded, because the lives of many men in some far battle front may depend upon that tube.

Precision-built burners—scores of them—carry the gas from the main feeder lines to the individual jets on the various machines. These burners, being built as they are for fine work, must require the best of gas if maximum efficiency is to be attained. Just as our soldiers, sailors and marines depend upon the reliability of the tubes in their work, so does R.C.A. depend upon the quality and supply of the gas which must be available to produce the tubes.

Another important part gas is playing

at the R.C.A. plant is in the operation of its two huge cafeteria kitchens, where food is prepared for several thousand employees daily. Gas is used exclusively to prepare the food for men and women whose job it is to produce weapons of war.

Visalia Holder Put in Service

COMPLETION of the new high pressure spherical gas holder at Visalia, California, has been announced by Elting Henderson, manager of distribution, compression and storage, Southern California Gas Company.

Since December 10 when it was put into operation, need for its construction has been evidenced on several occasions when new all-time peak hour demands have occurred. It was built to augment the gas supply in the Visalia area as far south as Porterville and as far north as Reedley and Dinuba.

Sixty-five feet in diameter, the holder required 360 tons of one-inch steel in its construction. Gas stored in it will be under 55 lbs. of pressure, reducing its normal volume about three and one-half times.

STEPSAVER KITCHEN MAKES DEBUT

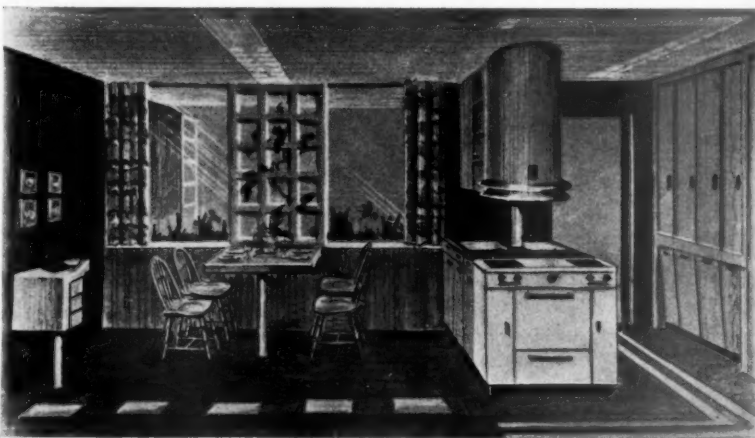
A STEPSAVER Kitchen, designed by Hardwick Stove Company to further the "New Freedom" idea of the A. G. A. Coordinated Kitchen Program, was on display to thousands of dealers who visited the American Furniture Mart in Chicago in January.

As efficient as a modern factory, every step in the handling, storage and preparation of food in this kitchen follows in logical sequence. Food brought to the rear door can be stored conveniently in the counter-high gas refrigerator, next prepared at the sink and work space adjoining the refrigerator, and finally cooked on the CP

gas range and served at the dining table.

One of the most desirable features of the Stepsaver Kitchen is the elimination of odors from cooking. A built-in exhaust system at the front end of the overhead cabinets is connected to the range oven. This ventilator also has an open grill which carries off odors from food cooked on top of the range. A small fan controlled by a switch above the range furnishes the suction to operate the ventilator.

Hardwick does not plan to sell complete kitchens postwar but is developing new kitchen displays to stimulate interest in gas appliances.



Stepsaver kitchen designed by Hardwick to tie in with the New Freedom Kitchen Program

Keeping Supervisory Employees Informed

Pertinent information on a problem vital in peace and war, compiled from a survey of fourteen companies by the Association's Personnel Committee



J. D. Dingwell

EVERY company has the problem of keeping its supervisory personnel informed on changes in policy, and upon the effect of various national and local developments upon the organization. While this is especially critical in large companies, where the line supervisors necessarily have little opportunity for personal contact with top management, even in medium-size and small concerns it is not uncommon for first-line supervisors to obtain such information through the "grapevine" or from their subordinates. Naturally, such reports are often distorted and do not represent the true attitude or policy of the management.

A member of the A. G. A. Personnel Committee, realizing that all levels of supervision in his company were not kept adequately informed, decided to determine how other companies handled this problem. Through the cooperation of members of this committee (which is comprised of personnel and industrial relations executives) and other interested parties, a rather comprehensive survey was completed.

The committee thinks that the following summary will be of interest to gas industry executives generally. It is *convinced* that every company which does not already have a systematic method of keeping its supervisors informed can, through the adoption of one or more of the procedures described herein, substantially improve its relations with *all* employees. Such information is vital to the supervisor, in his important role of management's representative to the employees he supervises.

* Past Chairman, American Gas Association Personnel Committee.

BY J. D. DINGWELL*

Assistant Vice-President, Personnel Relations, Washington Gas Light Co., Washington, D. C.

"Master Conference Plan," as Used by Large Manufacturing Concern

Every Friday morning the eight superintendents responsible for the operation of the major departments of the company meet with the vice-president and other management officials to discuss current problems and new developments which may be of importance to the company.

The vice-president usually conducts the meeting. The training director sits in at these meetings, occasionally conducting them and taking notes from which he prepares the minutes that afternoon.

The superintendents receive the minutes on Saturday, and hold similar meetings with all of their supervisory employees on Monday. Since the plant works on a three-shift basis, most of the superintendents hold three separate meetings each Monday in order to include all supervisors.

The superintendents also prepare minutes of their meetings, which are forwarded promptly to the vice-president. These are checked by the training director to see that everything of importance was covered.

The major advantages of this plan are that it keeps the executives of the company fully informed and provides a systematic and accurate means of assuring that they, in turn, will see that the entire supervisory organization receives and understands the information which it needs to operate intelligently. The plan is considered a major factor in the outstanding war production record which is being achieved by this company.

Methods Employed by Other Companies

Company A

Weekly meetings are held for the purpose of keeping key executives informed of changes and new developments. The meetings are attended by the president, the executive vice-president, the other vice-presidents, the assistant vice-president, the general superintendent of electric operations, the general superintendent of gas operations, the manager of the industrial and commercial department, and the personnel manager.

No minutes are taken. The executives pass the information they receive down through the regular lines of supervision. This is done orally, or by issuing written instructions, or by holding supervisory meetings—whichever method the executive considers preferable.

Meetings of divisional executives and supervisors and meetings of the departmental supervisors within the divisions are held to discuss operating problems. Such meetings are held intermittently or on a regular schedule, depending upon the preference of the individual department heads involved.

In addition, the electric operating division, the gas operating division, and the customer accounts division hold meetings approximately monthly which are attended by approximately 75% of all company employees. The personnel manager also attends those divisional meetings.

Company B

A monthly meeting of department heads is the principal medium for informing supervisors as to general policy, the state of the business, effect thereon of local or national developments, etc.

The president usually presides at the meeting, which is attended by officers, department heads, and the heads of various departmental divisions.

Minutes are supplied to department heads and it is their responsibility to pass on pertinent information to supervisors who do not attend.

In addition, the company issues written material from time to time which is intended to keep the supervisory organization up to date on policies.

Special meetings are also held as required. The subject to be discussed determines who presides and which supervisors attend.

Company C

Once a month an all-day meeting is held of the "Advisory Conference Group." This is comprised of approximately 25 department heads and division managers, representing geographically widespread operating units.

A means has been developed of transmitting information to about 250 supervisors by telephone, so that 95% of all employees can be reached within four hours. Where speed is not so necessary, mimeographed information is distributed by mail to the above supervisory organization.

A bi-weekly company newspaper is quite helpful in correcting "grapevine" rumors, although the time between deadline and actual delivery to the employee's home is about five days.

Company D

At least once every two weeks, and quite often every week, the "Advisory Board" meets to discuss changes in company policies which are under consideration, prior to final decisions thereon. Each department is represented on the Board, and these representatives are given an opportunity to explain how the proposed changes will affect their units. The president presides over the meetings, and the other members of the Board are the vice-presidents in charge of accounting; distribution; electric; investigation and purchasing; manufacturing, pumping, engineering and construction; and sales; the treasurer; superintendent in charge of manufacturing; purchasing agent; personnel manager; safety director; and secretary to the president.

Minutes are recorded by the president's secretary, who types and distributes them to members of the board.

In addition, a monthly meeting is held by a group of high-ranking supervisors representing all divisions of the company. Also attending are one or more members of the Advisory Board and a committee of three union representatives. First, inaugurated as safety meetings, the function has since been broadened to such an extent that virtually any company activity or policy is an appropriate topic for discussion.

A "Joint Committee Meeting" is also held monthly, attended by four management and four union representatives. This committee was set up primarily to handle grievances, but its discussions have broadened to include general conditions of employment, suggestions for the improvement of employee-employer relations, and other similar topics. Minutes of such meetings are distributed to each member of the Advisory Board and are also read to the union membership at a meeting which the union holds each month in the evening of the day after the committee meeting.

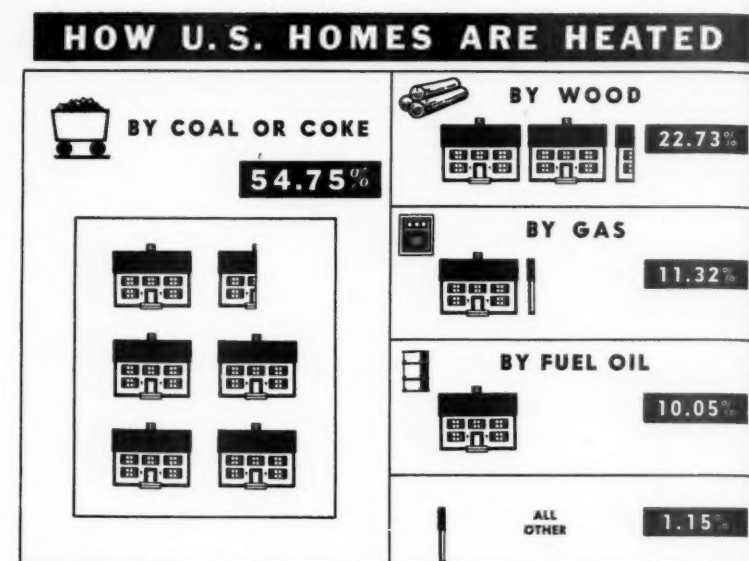
Company E

The president holds a staff meeting, usually once a month, attended by the top executives of the company. The executives then conduct meetings for the other levels of supervision through the regular organizational channels. No minutes are prepared, but at times printed matter is used to supplement discussion on various subjects.

Company F

The vice-president of this company reports that he has eliminated the "grapevine" method of policy information reaching the supervisory personnel by personally visiting company properties to have first-hand discussions with the supervisors.

If and when any suggestions or discussions indicate that a change in policy may be indicated, the vice-president calls in the



interested supervisors to discuss with them the reasons and give them an opportunity to make recommendations before a final decision is reached. He finds that this gives the supervisory employee a "constant working knowledge of what is going on in other departments."

The vice-president further states that "it also has eliminated mistaken notions of encroachments and has had the tendency to bring about closer cooperation between departments, since each department head has an opportunity to find out what effect a suggestion of his may have upon another department." No minutes are kept of such meetings, but anything of importance is covered by letter to heads of departments.

From time to time luncheon meetings are held with supervisory groups and each one present is invited to contribute anything that may be of interest or benefit.

Company G

This organization schedules well in advance regular meetings of all supervisors down to and including the foreman level. At each meeting a member of the top executive group discusses a selected and pre-announced subject.

The whole idea revolves around regularly scheduled meetings of groups of people in supervisory positions, designed to make sure that the entire organization is familiar with management views and policies, so that these people will not depart from such policies in dealing with their subordinates. It also places them in a position to keep their subordinates informed of developments which should be the common knowledge of all employees.

The vice-president of this company states that the meetings are scheduled at regular dates instead of "catch-as-catch-can" because they have found that this adds a

measure of formality and importance which insures full attendance.

The topics are selected, insofar as is possible, to conform with the needs and expressed interests of those who attend the conferences. For example, a recent schedule shows that one semi-monthly meeting was devoted to each of the following topics: The Foreman's Accident Prevention Job, Reviewing the Annual Report to Stockholders, Grievances—Ways and Means of Handling Them, Building Cooperative Organization Relations, The Foreman's Place in a Cost Reduction Program, The Use of Practical Job Psychology, and Employee Discipline.

Company H

Due to widely scattered operating units, frequent meetings of foremen and supervisors with the top management of this company are hardly possible under present day transportation difficulties. A program of monthly meetings of all supervisory employees with top management was in effect until the gasoline and rubber shortage caused its abandonment.

The only contacts at the present time are foreman's conferences, which are held every two or three months, and circular letters. The industrial relations manager reports: "Foreman's conferences are effective; circular letters are not."

Company I

Every two weeks a "headquarters" meeting is held, attended by the managers of the six divisions which comprise this organization. (These six divisions are widely separated geographically, complicating the problem of centralized control and coordination.)

The meeting is conducted by one of the top executives, usually by a vice-president. Special meetings are also held with this group from time to time. For example, a

session was held at the conclusion of the most recent union contract negotiations, so that terms of salary settlements and other provisions might be thoroughly discussed and understood.

Minutes of all such meetings are issued to the division managers in sufficient numbers so that they can distribute copies at their local meetings with the district managers. The latter are normally held on the day following the headquarters meeting, and constitute the medium through which the policies are passed along to the first line of supervision.

Training programs are frequently conducted for supervisory personnel, and these programs also provide a means for accomplishing at least part of the general objective of keeping them informed on company policy and developments.

Company J

About once a month meetings are held to discuss financial results of the company's operation and any new matters of company policy or events having a bearing on the business. Such meetings are usually conducted by the president or other principal executives, with discussions normally limited to questions and answers. Attending the meetings are the executives, department heads and district managers.

Occasionally supervisors, or specialists in the organization having some new commercial or technical project will outline it to the group. No minutes are taken.

Those attending the meetings hold similar meetings where considered advisable with their own supervisors, or with the employees in general.

Company K

At regular intervals the executive staff (composed of officers and department heads) hold meetings at which desired changes are discussed and acted upon.

The department heads, in turn, hold meetings of their supervisory personnel and pass on the pertinent information.

No minutes of meetings are recorded.

Company L

The vice-president of this company writes:

"I am sorry to say that in common with many other companies we do not find ourselves too well equipped for keeping our personnel advised in regard to company policies, etc.

"We do have company meetings, house organs, circulation of pertinent literature; none of which, in my estimation, do much more than scratch the surface.

"In my estimation, the very least any institution can do is to make available to each employee a statement of the company policies, rules and regulations, etc., in the employment manual. A good many misconceptions are thus removed at the beginning of employment.

"Another very favorable source of contact which has been generously employed in this organization is the business meetings with employee representatives. We have been fortunate in creating a favorable atmosphere and a certain measure of confidence in the minds of these representatives, to the extent that a good many misconceptions are brought to light and discussed freely."

* * *

S. Avery Raube, assistant director, National Industrial Conference Board, replied as follows to a letter requesting procedures used by industry in general for keeping supervisors informed:

"You are certainly in quest of information on a subject of great importance. As a typical example of procedures which are effectively used by some department stores, I shall describe the method of one well-known store with which I am particularly familiar.

"The responsibility for the operation of this store is in the hands of a group of top executives called the Management Board. All of the members of this Board are vice-presidents of the company. The Board meets regularly once a week. The meetings are scheduled early in the morning and not infrequently run on through to late afternoon.

"Within 48 hours after the Management

Board meeting, each Board member holds a meeting with his own staff. For example, the store superintendent's meetings are attended by the traffic manager, the service superintendent, the two budget controllers, the maintenance manager, the work rooms manager, the warehouse manager, and the personnel director. Similarly, the general merchandise manager's meetings are attended by the divisional merchandise managers.

"At these meetings the plans, procedures and policies discussed at the Management Board's meetings are passed along to the second line of executives. Of course, the topics that affect the activities of the merchandise division are discussed in greater detail by the general merchandise manager in his meetings than by the controller in his meeting. But in order to achieve the maximum of coordination all topics which have any effect whatsoever on related departments are discussed and explained in varying degrees of detail.

"Then too, there are naturally some topics discussed at the Management Board meeting that are not mentioned at all in the secondary meetings. But, as one might expect, these second line meetings are not limited to subjects discussed by the Board members. On the contrary, each vice-president usually devotes the major portion of the meeting to timely and pertinent topics and observations that relate specifically to the operations of his own divisions.

Reaching All Classes

"Within another 48 hours, the second line executives hold meetings with the members of their staffs. For example, the personnel director meets with his staff, including the employment manager, the cafeteria manager, the manager of the Mutual Benefit Association, the training director, and the supervisor of the personnel records section. Similarly, the divisional merchandise managers meet with their respective buyers, and so forth. These meetings follow the same pattern as those held by the second line executives described above.

"On the day following these meetings, the same type of meetings are held with the supervisors, and on the same day or the following day, meetings are held with the rank and file employees.

"The number of meetings required in each major division before the rank and file employees are reached varies, of course, with the number of levels of supervision. In the publicity department, for example, the publicity director's meeting is followed directly by meetings in which the lowest level of employees in the publicity department is involved. On the other hand, the organization structure of the service superintendent's divisions is such that a much larger number of different levels exist and, therefore, more meetings are required before the rank and file employees are reached.

"I believe that the significance of the above procedure lies first, in the rigid adherence to a regular schedule of the meetings; second, in the reliance on meetings

New Outlet for Appliances

● Gasoline service stations after the war may become shopping centers handling a host of products—even to refrigerators and radios—besides supplies and services for automobiles, says "Ethyl News," publication of Ethyl Corporation.

This evolution of the gasoline outlet, from filling station to service station to "service store," is visualized as paralleling the development of the modern drugstore and cigar store, which also branched into sale of many unrelated products.

Wartime reduction in gasoline sales

turned many service stations to stressing sale of automobile supplies and services, and such diverse items as toys, household appliances, sporting goods, aspirin, garden seeds, and an almost endless list of other goods, it is pointed out.

Some of the major oil companies have postwar plans for super station service, and two companies "are planning to handle such heavy items as refrigerators, stoves, ironers, console radios, and washing machines. These will be warehoused by the companies, and delivered in company trucks to dealers for display and sale."

as a major means of achieving a free flow of information; and third, in the fact that information regularly reaches every employee.

"It is my impression that this type of meeting procedure is not nearly as widely used in industrial companies as in the retail field. Probably one reason is that companies hesitate to take the time to hold meetings with employees on an hourly rate. However, as you probably know, there are industrial companies that hold meetings with all employees. However, from our contacts I am led to believe that these are mostly mass meetings the purpose of which is not primarily the dissemination of information.

"If you have not already done so, you might do well to secure a copy of 'Sharing Information with Employees,' by Alexander Heron. He was for many years the Industrial Relations Manager of the Crown Zellerbach Corp., and is now a Colonel in the Army. He is a well informed and highly capable person in this field."

* * *

EXCERPTS FROM THE EXCELLENT BOOK, "SHARING INFORMATION WITH EMPLOYEES," by Alexander R. Heron, Stanford University Press, 1942, 201 pages. Reproduced by permission of the publishers.

"Unless understanding can be achieved between the individuals and the so-called

'classes' within American industry (notably 'capital, labor and management'), our boasted way of life is in danger. This danger is within, and is as real and immediate as any threat from the ideologies beyond the seas. We may see the symbol of democracy win another war against the symbol of dictatorship. But unless we can restore among ourselves the understanding of our common interest in our daily economic life, the victory will belong to the symbol of democracy, not to the reality of democracy.

"We may be living through a basic change in our method of life, a social evolution so 'speeded up' as to be in fact a revolution. We may have no conception of the economy within which we shall live, work, produce and consume just a few years hence. But this we do know: Regardless of the form of economy or government, there will be work to do. The functions of production and distribution will go on. Tasks will be subdivided, and there will be those who direct and manage and those who accept direction and perform the work. Between these managers and workers, understanding will always be the needed link. Without this understanding, no ideology will survive, no social structure will serve, no economic system will produce our homes and clothes and food."

NOTE: The major portion of Heron's book is devoted to a constructive and detailed discussion of the media for sharing

information with employees: bulletin boards, pay inserts, annual reports, house organs, handbooks, direct mail, mass meetings, group meetings, the grapevine, etc. In the chapter, "The Line Supervisor," he concludes:

"No medium for carrying information can duplicate or displace the supervisor who lives with employees in their daily work. No program of using conventional media for conveying information to employees can be wisely planned without the benefit of his advice. No information can be completely and intelligently shared with employees without his effective supplementary and explanatory work. No question raised by an employee can safely be diverted around him without weakening him in his essential function.

"In sharing information, in building understanding, as in managing the daily work, there is no substitute for the line supervisor."

BREATHING EQUIPMENT

(Continued from page 58)

this equipment has been purged with inert gases or steam, a careful check should be made and a mask used when necessary, especially if there is any possibility of gas leaking into the apparatus through defective shut-off valves.

Men working in coal or coke bunkers, ash pits, combustion chambers, coke screening plants, or any other places where the air may be heavily laden with dust, should be protected against dust inhalation by means of respirators.

It cannot be too strongly emphasized that the man wearing the mask, should wear a harness of leather or equivalent approved linen or cotton webbing and life line, when entering closed vessels and should be kept in view by another man outside of the vessel or piece of equipment.

IV. Use On Customer's Premises

Rarely is a gas mask required in connection with work done on customer's premises. In the case of a bad gas leak and where a basement or other enclosed space is filled with gas, a mask must be worn while the leak is being located and repaired.

At times gas services must be rodded from the basement in order to remove a stoppage interfering with the gas flow. There is generally some gas leaking past the stoppage, which the man

HISTORIC AVILA ADOBE GOES MODERN WITH GAS



The Avila adobe on Olvera Street, oldest and most historic building in Los Angeles, has gone modern to the extent of having natural gas service installed. In la cocina (the kitchen) installed in an old charcoal brasero are two modern gas burners. Behind the kitchen is a modern gas water heater. Originally built in 1818, Avila adobe was restored recently

performing the work might inhale. If this flow of gas is appreciable, a mask should be worn.

V. Inspection of Safety Equipment

1. INSPECTION OF GAS MASK

A. Face Piece

1. Check for stress.
2. Is rubber pliable?
3. Check head harness, hose, buckles, attachments.
4. Cracks.
5. Age of face piece.
6. Is it inspected regularly?
7. Condition of nonshatterable lenses and mounting.
8. Canvas pouch for mechanical protection and cleanliness.

B. Fit

1. Is mask permanently "set" due to being stored in a folded position?
2. Is head harness loose when stored?
3. When tried on does it assume normal shape?
4. Does mask maintain a deformed shape when twisted? If so, discard.
5. Is rubber soft and spongy?
6. It is cleaned after using (use soap and water) or chlorine solution or equivalent?

C. Exhalation Valves

1. Is center support removed and seat cleaned regularly?
2. Is seat corroded? If so, discard.
3. Is retaining mechanism in good condition?
4. Any mold present in valve?
5. Is valve open or closed? Does it seat properly?
6. Is it cleaned regularly? Use chlorine solution.
7. Is valve soft? If so, discard it.
8. Does it give positive pressure seating?

D. Connections and Fittings

1. Wired connections for corrosion.
2. Does wire cut rubber? Use strong string.
3. Are cover bands tight?
4. Screw connections of metal, rubber, bakelite.
5. Is rubber cracked at connections?
6. Are gaskets soft?
7. Is rubber kneaded during inspection?

E. Cleaning

1. Is face piece cleaned after using?
2. Is it placed in a cloth bag?
3. Is sterilizing agent used for cleaning?
4. After cleaning, check for leaks.

F. Wire Wound Hose

1. Cracking of rubber.
2. Breakage of wire.
3. Inspect hose inch by inch.
4. Flex hose when inspecting.

5. Are couplings attached and in good mechanical condition?
6. Are gaskets properly seated?
7. Are gaskets approved type?
8. Inspect funnel.
9. Restrictions due to permanent set.

G. Blower

1. Leakage at points of assembly.
2. Loose, worn or improperly greased bearings.
3. Does handle fasten properly to drive shaft?
4. Fittings for replacement.
5. If combination hand and electric, test for free and easy running.

H. Safety Harness

1. Condition of leather for cracks.
2. Hardware for corrosion, noncorrosive metal.
3. Belt at buckle holes.
4. Is it stiff, shoddy or pliable?
5. Safety line provided with harness.
6. If hose is used for safety line, see that clamp holding hose to back of belt is firm.

I. How to Wear Mask and Harness During Inspection

1. After mask has been placed over face, tighten lowest straps first and progress upward with adjustment.
2. Check each fitting by shutting off incoming air and "sucking in."
3. Doubling up the corrugated hose and squeezing it tightly will serve to shut off the air and if the face piece collapses against the face it is usually tight—although minor leaks can sometimes be noticed by the wearer and corrected by slight adjustment of the face straps.
4. Do not have safety harness too loose. Harness that is too loose will cause the wearer to be stripped of the mask and harness when they are pulled out of dangerous places.
5. Place the intake of the blower to windward. This is frequently neglected, yet as gas gets into the intake the wearer will be breathing gas, not air.

J. Proper Packing of Mask

1. Hose should be coiled in place.
2. Face piece should never be flattened but stuffed with cloth or paper before closing box.
3. Leather harness should be oiled with neatsfoot oil at least once every six months. Linen web harness should be checked for wear.
4. Blowers should be greased in proportion to their use.
5. If the outfit is to remain idle for some time a schedule of removal and repacking and kneading for the rubber parts should be instituted.
6. Is apparatus in a closed box and stored in a room of moderate temperature?

II. CANISTER TYPE MASKS

Same requirement for face piece and harness as other masks in addition to



HIGH

in public confidence

DEPENDABLE

as granite

...The AGA

Seal of Approval

With unquestioned integrity and uncompromising standards, the American Gas Association tests gas appliances in its modern laboratories. Inspectors know that only those meeting rigid requirements for safety and performance win the AGA Seal of Approval.

★

THE PACIFIC COAST GAS ASSOCIATION

A. G. A. appliance testing gets a boost in this building journal P.C.G.A. advertisement

strict observance of expiration date on canister. Timing device on canister. If tab has not already been removed from canister, this must be done before wearing and dated.

III. INSPECTION OF RESPIRATORS

A. Mechanical Filter Type Respirator

1. Face piece.
2. Rubber for cracking, age, etc.
3. Valves for free working.
4. Do they seal properly?
5. Head bands.
6. Respirator for cleanliness.
7. Keep respirator in container.
8. Keep in cool place.

B. Cartridge Type Respirator

1. Cartridges for age.
2. Tubing for leaks.
3. Inhalation and exhalation valves.
4. Face piece for deterioration.
5. Head bands.
6. Face piece for cleanliness.
7. Container.

C. Air Line Respirators

1. Face piece.
2. Tubing for leaks, wear, etc.
3. Air control valve.
4. Cleanliness.

Fuel Saving Goal

THIS year's goal of the National Fuel Efficiency Program of the Department of the Interior is to save 29,000,000 tons of coal and proportionate amounts of oil, gas and other fuels. Launched more than a year ago in cooperation with the Bureau of Mines, the program has pledged an army of volunteer workers and 7,500 large industrial consumers of fuel to cut fuel waste to a minimum.

ACCIDENT PREVENTION COMMITTEE MEETS

THE Accident Prevention Committee of the American Gas Association met at the A. G. A. Testing Laboratories, Cleveland, Ohio, on December 18. This, the first meeting of the committee for the present Association year, was presided over by the new chairman, W. T. Rogers, Ebasco Services Incorporated. Features of the meeting were an inspection trip through the Laboratories and an inspection of the property of The East Ohio Gas Company which had been damaged by fire and explosion on October 20.

It was decided that the work of the Subcommittee on Review and Classification of Lost-Time Accidents in the Gas Industry would be pressed during the coming year, and it was suggested that the subcommittee should consider a breakdown of lost-time accidents as follows:

1. Manufactured and mixed gas
 - a. Water gas production
 - b. Other gas production
2. Distribution
3. Natural gas other than distribution

It was decided that following the preparation of the report on the review and classification of lost-time accidents in the industry, the subcommittee would prepare plans for extensive use of this data in the accident prevention work of the industry.

Posters

Methods of cooperating with the National Safety Council staff and the Public Utilities Section of the National Safety Council in the preparation and distribution of posters directly applicable to the gas

industry were discussed. A Subcommittee on Posters was appointed and each member of the Committee was asked to submit three poster suggestions with sketches, etc., to the new subcommittee. The subcommittee was empowered to select the most suitable poster suggestions and forward them to the National Safety Council staff for reproduction. It was reported that the National Safety Council will immediately prepare four "gas" posters.

Fire Report

It was decided that the subcommittee concerned with "Unusual Fires or Explosions on Gas Company Premises" subject would get out a report which will cover the year 1944.

A subcommittee was appointed to prepare safety topics and, where possible, provide qualified speakers for the National Safety Congress, its regional divisions, other safety conferences, distribution and

operating conferences sponsored by the A. G. A., and other groups desiring to include safety matters affecting the gas industry in their programs.

Included in projects to be developed during the coming year are safe practice pamphlets on "bagging mains" and on "testing atmosphere in underground structures," a safe practice pamphlet for gas servicemen, and a report on traffic safety. Another study contemplated is an outline of what constitutes an effective safety organization and program for small gas companies, companies just setting up a safety department or for companies desiring to revamp their safety departments and its operations. It was suggested that this report should be equally applicable to manufactured, mixed and natural gas companies.

After discussion of other reports and routine business, it was decided that at the next meeting time would be allowed for the discussion of unusual accidents and methods for their prevention in an "accident hour" which had proved so beneficial at the final meeting of last year's committee.

LP GAS MAKES PROGRESS IN 1944

MARKETED production of liquefied petroleum gases for uses other than synthetic rubber and aviation gasoline is estimated to have increased 110,000,000 gal. or 16.2 per cent in 1944 to 785,000,000 gal. The estimated increase for LPG purposes was 20,000,000 gal. larger in volume than the increase shown the previous year. These estimates were made by G. G. Oberfell and R. W. Thomas (The Oil and Gas Journal, January 6) who summarized further gains as follows:

Household (domestic) demand for LPG is estimated to have increased 53,000,000 gal. or 15.5 per cent in 1944 to 392,000,000 gal. In 1943 the increase in household (domestic) consumption was 39,821,000 gal. or 13.3 per cent and in 1942 it was 78,837,000 gal. or 35.7 per cent. Wartime restrictions kept new installations at a low level but there was a considerable amount of shifting of equipment from summer cottages and similar seasonal dwellings to the homes of year-around users. Demand for LPG also was greater from existing consumers because of economic conditions.

It is estimated that there were 1,950,000 domestic users on December 31, 1944, an increase of 50,000 during the year. Buried butane installations in the south increased an estimated 16,000 in 1944 to 335,000 and all other types of domestic installations are estimated to have increased 34,000 to 1,615,000.

Industrial fuel, internal-combustion-engine fuel and miscellaneous uses of LPG rose an estimated 44,000,000 gal. or 18.1 per cent in 1944 compared with an expansion in demand of 41,501,000 gal. or 20.6 per cent in 1943. Most of the increase in industrial-fuel use may be attributed to the fact that war-plant consumers of LPG were

operating during the entire year of 1944, whereas many of these plants did not begin operating until the middle or latter part of 1943. The relatively minor war contract cancellations and cutbacks near the close of the year did not materially affect the industry, moreover these contract reductions and cancellations came at a time when the normal seasonal-use curve was rising.

City gas plants are estimated to have consumed 46,000,000 gal. of LPG in 1944, an increase of 22.6 per cent over 1943. This increase was greater than the 19.6 per cent increase in 1943 largely because of the use of LPG for coal enrichment and underfiring of coke ovens in several large cities.

Gas Holder Standby

One city gas plant stored LPG at low pressure in undiluted form. No high-pressure liquid storage tanks were available so the company allocated a 3,000,000 cu.ft. gas holder to butane and propane storage. As tank cars were received the butane or propane was vaporized in a conventional heat exchanger and undiluted vapor pumped into the holder at 6-in. water column pressure. The gas holder acted as a standby from which gas was withdrawn at peak-load periods, diluted and added to the send-out stream. By storing 3,200 B.t.u. butane vapor instead of 530 B.t.u. gas the capacity of the holder was expanded in effect from 3,000,000 to 18,000,000 cu.ft. of 530 B.t.u. gas. At present the holder is being used for the storage of undiluted propane vapor. This is because butane is unavailable now in adequate quantities because of war demands for aviation gasoline and synthetic-rubber components.

Gas Dryer

● An automatic clothes dryer, available in gas models, built by the Hamilton Manufacturing Company of Two Rivers, Wisconsin, the world's largest builders of professional furniture, will be sold nationally after the war. It is said to have already proved its worth by dependable economical performance in several thousand American homes and apartments, in all parts of the country, for the past five years it has been used.

The Hamilton dryer damp-dries (ready to iron) the average washer load of clothes in 15 to 25 minutes. Complete drying takes slightly longer. It holds a maximum washer load of 9 lbs. of dry clothes and up to 18 lbs. of wet clothes in one load.

Operating cost of the dryer is said to be low—at average rates, about 3¢ an hour, or 1½¢ per washer load. Dimensions are 39 in. high; 31 in. wide, and 25 in. deep. It is of steel construction with white enamel finish, quiet in operation and requires no lubrication.

New Class In Gas War Equipment

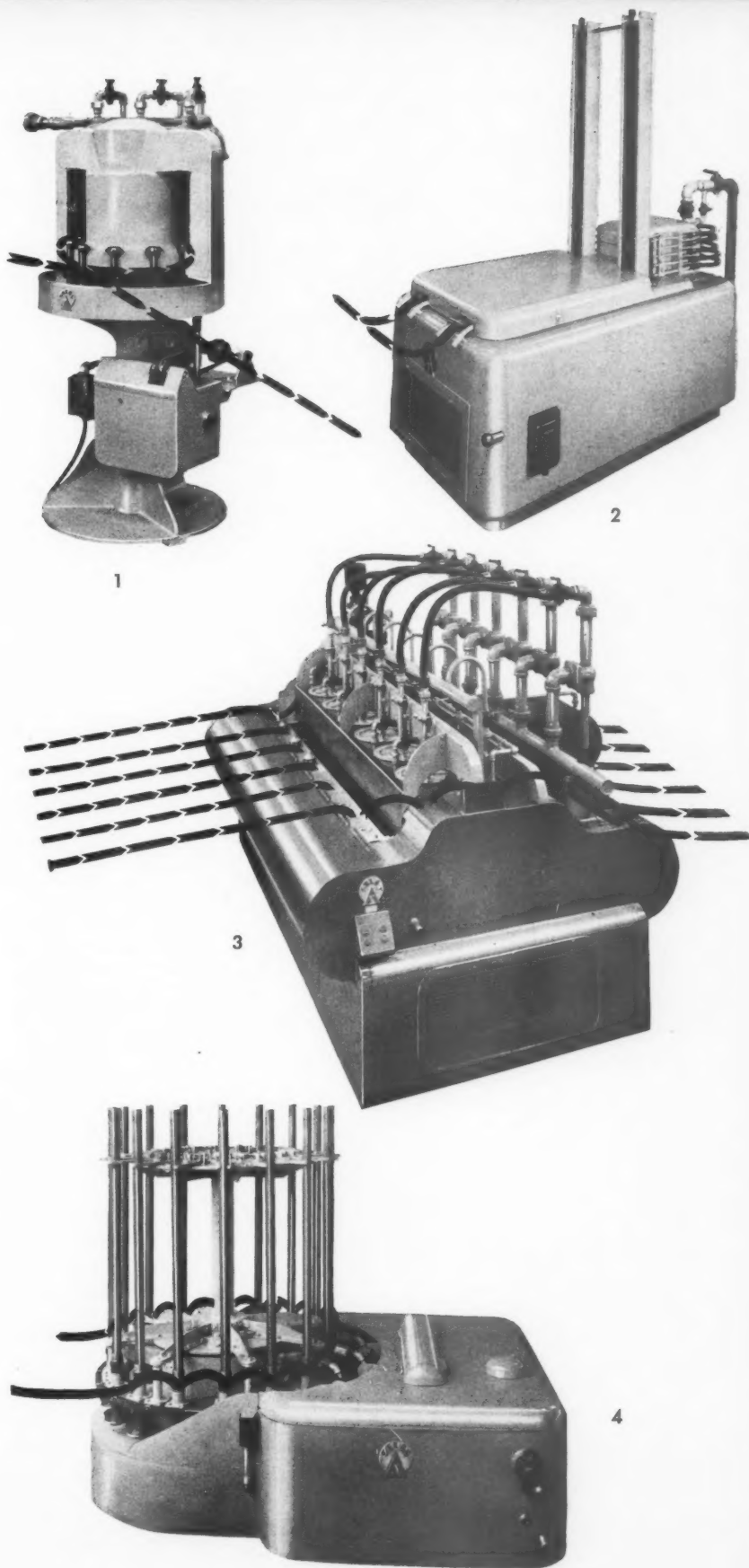
THROUGH new gas combustion techniques, through new-found knowledge of how to intensify, to localize, to pattern and to control the liberation of heat from burning gas-air mixtures—a new class of production-line machinery has come into being. These examples of modern gas-fired equipment designed and produced by the Selas Corporation of America show the great strides that have been made in industrial gas equipment during the war. Their contribution to the war effort is immense. They are used for localized hardening of steel products, for the annealing of glass electronic assemblies, for the treatment of surface coatings on wire, for the assembly of ordnance by silver-brazing, for continuous heat processing of rod and tube at mill speeds, and countless other applications.

1. Electronic tubes—Glass-and-metal unit assemblies for electronic tubes are worked hot—will shatter between operations if not annealed. This radiant-fired "lehr" is about the size of your mimeograph machine—handles 96 X-ray tube subassemblies an hour during "merry-go-round" travel.

2. Cartridge clips—this unit heat-treats cartridge clips for 30-cal. carbines. Clips are stacked like gum in a vending machine and flame-hardened locally during ten last positions at bottom of stack. Spray quenching is performed under the cover. Finished clips are delivered to a transfer belt at a rate of 7200 per hour.

3. Armor-piercing shot caps—This six-line machine for hardening the mass of a 75 mm. armor-piercing shot cap can deliver 150 caps per hour. Note indicating flow meters in each fuel line, close control of timing and consumption insuring uniform production.

4. Chemical bombs—The burster tube of a chemical bomb is assembled by brazing. One operator loads and unloads 500 per hour. Four loading stations, four simultaneous two-burner heating stations, and eight cooling stations, make the circuit.



Personnel Conference Held by A. G. A.

THE A. G. A. Midwest Personnel Conference met for the second time in Kansas City, Missouri, January 10. Its purpose was to afford the opportunity for gas company executives to discuss current industrial relations problems. Chairman R. B. Harkins of Panhandle Eastern Pipe Line Company presided. The meeting was attended by Kurwin R. Boyes, secretary, American Gas Association, and 19 other delegates representing 11 different gas companies from the 5 midwestern states included in this conference.

Mr. Boyes outlined how the Association is handling industrial relations for the gas industry and what the plans are for the immediate future. He also pointed out that the Personnel Committee and the Southwest Personnel Conference will work closely with this group in exchanging information on industrial relations.

Charles Mosely, assistant counsel, Missouri Unemployment Compensation Commission, gave a talk on Unemployment Compensation in which he explained its purpose, cost to employer, benefits to employees, disqualifications, and its future.

Next conference will be held in Kansas City, March 8, 1945.

Record Sendout

A RECORD demand for gas was experienced by The Brooklyn Union Gas Company during 1944. Sendout figures show that 28,501,939,000 cubic feet of gas was pumped into the company's mains, and that this was 956,071,000 cubic feet, or 3.47% over the total for 1943, the highest previous year.

The increase occurred in spite of the fact that the average temperature was 54.3°, which was above normal and a full degree above the average for the previous year.

"E" Award to Kitson

KITSON Company, Philadelphia, has been honored with the Army-Navy "E" Award for outstanding production of war materials, according to an announcement by James Forrestal, Navy Secretary.

Kitson Company, a wholly owned manufacturing subsidiary of the Welsbach Engineering and Management Corporation, has been for many years an outstanding manufacturer of brass products for the gas utility, water works, and plumbing fields.

According to Morse DellPlain, president, negotiations for Kitson's first war contract with the Navy were initiated in December 1940, a year before Pearl Harbor, and the foundry completely modernized for the work of producing bronze castings, electrical fittings, and torpedo parts for the American and British Navies.

Kitson was among the first ten industries in Pennsylvania to organize a labor-management committee to promote efficiency and speed up war production. Early in

1942, radio station WCAU signally recognized Kitson Company's war effort in a special broadcast as part of a weekly series "Industry Goes to War," and conferred on Kitson Company the WCAU War Production Award of Merit.

Appropriate ceremonies for the presentation of the "E" Award Flag, to be flown at the factory, 2409 W. Westmoreland Street, and lapel pins to all employees are being planned.

Pacific Coast

Gas Advertising Program

DURING 1945 Pacific Coast gas companies, for the 17th consecutive year, will conduct an advertising and publicity campaign in behalf of gas fuel through the Pacific Coast Gas Association.

According to an announcement by Managing Director Clifford Johnstone, the Association's advertisements will appear regularly in five magazines reaching domestic customers, two journals published for retail dealers, and 12 journals reaching major professions and industries which use large quantities of gas.

Included among the magazines are Sun-set, California Parent-Teacher, California Federation News, Parent-Teacher Courier, Parent-Teacher Journal, Western Plumbing & Heating Journal, Western Radio & Appliances, Architect & Engineer, Arts & Architecture, Building Contractors Forum, Building Standards, Western Baker, Pacific Coast Record, Keelers' Pacific Hotel & Restaurant Review, Western Hotel & Western Report, Western Metals, Western Machinery & Steel World, Pacific Factory, and Gas.

Natural-Gasoline Plants in Texas

TEXAS has 128 natural-gasoline plants, which, operating at capacity, can process 5,237,528,000 cu.ft. of natural and casinghead gas daily, according to a booklet prepared by the Statewide Committee of Oil Operators in its fight against ratification of the Anglo-American oil agreement. The state has 113 refineries, with a total daily crude-oil capacity of 1,456,350 bbl., and 37 carbon-black plants capable of extracting carbon black from 1,030,750,000 cu.ft. of natural gas daily.

The oil industry in Texas has 73 pipe lines with a total length of 34,828 miles. It takes 9,000,000 bbl. of crude oil to fill this pipeline system.

Leases for oil and gas total 48,500,000 acres. Annual rentals and bonuses on oil and gas leases in the state aggregate \$70,000,000. There are 169,400 persons employed in all branches of the oil industry in the state, with an annual payroll of \$331,847,050.

There are 140 counties in Texas producing oil and 36 counties producing gas. There are 1,021 oil fields with 2,914,096 productive acres. As of November 4, 1944, there were 101,421 producing oil wells and 3,686 producing gas wells in the state.

Public Service

Construction Program

A CONSTRUCTION budget for 1945 of more than \$15,000,000 has been authorized by Public Service Corporation of New Jersey for new equipment, extensions and replacements for its subsidiary operating companies.

Of the total amount, \$4,655,807 is for the Electric Department and \$3,740,460 for the Gas Department of Public Service Electric and Gas Company; \$4,114,300 for Public Service Coordinated Transport and \$2,159,600 for Public Service Interstate Transportation Company. The System Gas Companies of the Corporation—Atlantic City Gas Company, Peoples Gas Company and County Gas Company—are allotted approximately \$350,000.

An appropriation for the erection of thirty-seven new coke ovens at the company's Camden Coke Plant is a major item in the 1945 construction budget of the Gas Department. Other expenditures will be for the extension and further improvement of facilities for the manufacture and distribution of gas.

Convention Calendar

FEBRUARY

- 2 •A. G. A. Conference on Selection & Training of Sales Personnel, Portland, Oregon
- 5 •A. G. A. Conference on Selection & Training of Sales Personnel, San Francisco
- 8 •A. G. A. Conference on Selection & Training of Sales Personnel, Los Angeles, Calif.
- 9 •Midwest Industrial Gas Council, Chicago

MARCH

- 6 •A. G. A. Southwest Personnel Conference, Shreveport, La.
- 8 •A. G. A. Midwest Personnel Conference, Phillips Hotel, Kansas City
- 28 •American Society for Testing Materials, Spring Meeting, Pittsburgh, Pa.

APRIL

- 17-19 •Southwestern Gas Measurement Short Course, Norman, Okla.

MAY

- 7-11 •National Fire Protection Association, Annual Meeting, Palmer House, Chicago, Ill.

JUNE

- 19-22 •Canadian Gas Association, Victory Convention, Murray Bay, Que.

Accounting Section

C. E. PACKMAN, Chairman

E. F. EMBREE, Vice-Chairman

O. W. BREWER, Secretary

Highway to Customer Confidence



Henry J. Johnson

THE terms "Public Relations" and "Customer Relations" have been used rather interchangeably to denote the relationship which exists between the company and those whom it serves. The term "Customer Relations" seems to be the most desirable one because it re-

sults in relating our various activities more closely with the customer's interest.

Building good customer relations is not a matter of writing advertising copy which extols the virtues of the company, the industry, or the service in glowing and superlative terms, or having a "glad hand artist" to engage in various club and other civic activities. The quality and character of our customer relations is, and will always continue to be, the sum total of the reactions of our customers to company policies, the manner in which they are interpreted and applied, and the attitude which is demonstrated by company employees in all of their various contacts with the public. The importance of customer relations cannot be overemphasized because it must be remembered that every individual in the community is in some manner or other affected by the service which we render and the manner in which we conduct our business.

Personal Atmosphere

It is important that we substitute the personal for the corporation atmosphere by having every company employee show the same cordiality, friendliness and hospitality in every customer contact that he or she would show to their friends as they come to their homes. There is no substitute for friendliness. The value of it in all human relations has never been more effectively expressed than in the following quotation from Abraham Lincoln:

"If you would win a man to your cause, first convince him that you are his true friend. Therein is a drop of honey which will catch his heart and which, say what you will, is the greatest highroad to his reason, and which, when once gained, will result in little trouble in convincing his

BY HENRY J. JOHNSON

Director, Commercial Activities, The United Light and Power Service Co., Davenport, Iowa

judgment of the justice of your cause, if indeed that cause be a just one.

"On the contrary, assume to dictate to his judgment or command his action, and he will react within himself, close all avenues of approach to his head and heart; and though your cause be naked truth itself, transformed into the heaviest lance, harder than steel and sharper than steel can ever be made, and though you throw it with herculean force and precision, you shall no more be able to pierce him than to penetrate the hard shell of a tortoise with a rye straw."

We must at all times give the impression that we are anxious to find a way to grant the request that is being made. This can be done most effectively by encouraging the customer to talk freely about the problem and by the employee being a good listener and subsequently showing additional interest by asking questions until he is certain that he has all of the facts. This should be done even though the problem is simple and the solution very obvious because to the customer it is a matter of very serious concern. The employee must guard against ever appearing to be impatient or hurried, and indicate by his attitude that this particular matter is the most important work which he has to do during the entire day.

Company Policies

There are probably no company policies which are not designed to meet the customer more than half way. The difficulty is that the management has not taken the time or the trouble to interpret and explain these policies not only to the employees who handle customer relations in the office or on the telephone, but to all employees, because the building of the best customer relations cannot be confined to business contacts, it must be channeled through all employee personal contacts.

The number of employee personal contacts is generally much greater than the number of business contacts. Whenever a customer meets an employee of the utility company, he is likely to seek certain information and generally expects that employee to be properly informed. At times,

a customer may make a remark which is based on serious misinformation, and unless the employee is in a position to make a logical and convincing reply not only this customer but any others who may overhear the remark are likely to get the wrong impression. For this reason all company policies should be thoroughly analyzed for all employees. The basis for the policy should be carefully explained in order to show that it is based on the welfare of the customer more than on the interest of the company. Any policy which cannot be explained and justified on this basis should be changed.

Giving Authority to Employees

Every employee who deals with a customer should, after proper training, be given authority to make final settlement of every case. Everyone prefers to talk with a person in authority and prefers and expects an immediate decision. We do not want to deal with someone who can merely transmit our request, and we are not happy about accepting the decision of an individual with whom we have been unable to talk. We are likely to feel that the person making the decision was not given all of the facts and that the decision would have been different had we been able to tell our story direct.

If customer contact employees are carefully chosen and trained, it is usually safer to trust them to make a decision which is fair to both the customer and to the company than it is to have such decision made by someone behind the scenes. There will be times when an employee may possibly make a wrong decision, but this can be controlled by having someone in authority review the settlements that have been made, and whenever an error is found, discuss it with the employee involved and explain why the case should have been decided differently and just how the analysis should have been made. Employees will gladly accept responsibility and will always take more interest in their work if they are given responsibility.

Employee Education

Good customer relations depend largely on the kind of training which our employees receive. Every employee should receive a general training in the general economics of the public utility industry, the theory and practice of rate making and

other similar fundamental factors concerning the everyday operating problems of a public utility company. The employee who works behind the scenes should be given a thorough course in job training in order that he may perform his work efficiently and in order that errors and mistakes may be reduced to an absolute minimum.

The employee who handles customer contacts should be given a complete course of training in the fundamental operating methods of the company in order that he has a general understanding of the procedures that are followed in rendering the various services. This applies to reading the meter, preparing the bill, keeping the accounts and such other matters as vitally affect the customer. The customer contact employee should also be very carefully trained in the technique of dealing with a customer in order that he may be in a position to do it pleasantly, convincingly and efficiently. Each employee must feel that the standing of the company depends on his or her personal performance, and that in each individual contact "he is the company" to the particular customer with whom he may be dealing. It is absolutely essential that each and every employee develop not only a pride of organization but a pride of accomplishment.

Teach the Facts

Employees must be taught how to become analytical, they must know how to get all of the facts both from the customer and from the company records, and must then be taught how to reach a sound and fair conclusion and how to explain the matter to the customer so that he will be thoroughly convinced that we have met him more than half way.

No employee must ever be permitted to use such expressions as

"Well, that's our policy."

"We can't do that."

"Our rules have been filed with the Public Service Commission."

The customer has no interest in what our policies may be or whether our rules have been filed with the Public Service Commission. He is only interested in getting what he considers "a fair and square deal." Unless we have succeeded in convincing him that this is true, we have failed to gain his confidence and merit his good will. No customer will accept a "we can't do that" statement in lieu of what he considers "his just rights."

We should adopt the policy that no customer should leave our office or hang up

the telephone unless he is entirely satisfied. This should not be accomplished by carelessly and superficially granting unreasonable requests, because to do so would actually destroy the customer's confidence in our methods and policies. It will indicate a lack of confidence on our part in the accuracy of the bill as it was rendered or in the quality of some other action. Every explanation must be made in an attitude of helpfulness and a sincere desire to thoroughly and fairly explain all of the facts as they actually are rather than merely trying to justify the action that was taken or the error that was made. The customer will have much greater admiration and respect for both the company and for the individual employee when we demonstrate self-assurance combined with a sense of fairness and sympathetic interest than he would if we readily agreed to some adjustment without proper justification.

It is very seldom that any customer knowingly or intentionally makes an unjust request, and this fact should be recognized by each employee. It should be recognized that the customer is absolutely sincere and feels that the request which is being made is merely one which, if granted, will give him what he is entitled to. The customer is also ready to recognize the fairness of our position when it has been sympathetically explained.

Every employee should be trained to report any case of dissatisfaction which may come to his attention in order that it may be referred to the proper department or individual and cleared up to the customer's satisfaction. This is an example of the unexpected thing which can be done and which will always stand out in the customer's memory as evidence that the utility company is on the alert to adjust every possible difference.

Supervisory Training

Another practical application of this principle which is very effective is that of watching for any bills that may be substantially higher than they were during the previous months and instead of sending them to the customer in the usual way have them delivered personally with the explanation that this difference was observed, and that we have brought the bill in order to discuss it, and to make an investigation of any conditions which may have contributed to it. This practice, based on actual experience, has shown that in very few instances did the customer question the bill when handled in this way, whereas, when it was received in the usual course of events it was questioned. From the standpoint of actual cost, it has been found cheaper to handle these matters in this manner than to make the investigation after they are questioned by the customer.

Too many supervisors merely concentrate on getting out a specified volume of work and maintaining discipline. This is not enough—to be a good supervisor, he must be a good teacher, able to explain not only how a job should be performed, but also why it should be done in that par-

ticular way. The supervisor must also be able to inspire and enthrall those under his supervision. To be a good supervisor or a good executive, he must be a "good checker." It is not enough to merely make an assignment of work—he must show sufficient interest to see how it is progressing and to determine that it is being done properly.

Examine Activities

It is important that all activities be constantly examined to make certain that they are entirely satisfactory from the customer's point of view as well as being economically sound.

Security deposits should be taken on a highly selective basis and only when it seems absolutely necessary. It is better to try to find reasons why a deposit should not be taken than to be looking for the negative factors that might justify getting a deposit. It has been found from experience that even in highly industrialized areas not more than 5% of the accounts need to be secured by deposits. In these same instances, the collection policy was extremely liberal in that shut-off notices were not sent until a customer was in arrears three months. Collection expense was also low. Collection calls were made only on those customers who failed to respond to shut-off notices, and only one collector was required for every 40,000 to 50,000 accounts. Notwithstanding these factors, the bad debt losses were substantially less than one-tenth of one per cent.

Collection work should be placed on a highly selective basis; shut-off notices should be sent only when absolutely necessary. These notices, instead of being demanding, should be friendly and informal. Collection calls should be made only when a customer fails to respond to such notices. Collectors should be taught to show a sympathetic and friendly attitude instead of using typical "collector's tactics." Consideration should be given to changing the title of the employees who handle collections. It is suggested that they might be called "Customer Service Representatives" and that in addition to handling collections they also handle bill investigations together with any other calls which may affect customers.

Expressing Appreciation

We should express appreciation to every customer who finds it necessary to contact us for taking the time and trouble to come into our office or to telephone in order that we might have the opportunity to make the necessary adjustment. We should also express regret that they were thus inconvenienced, and the sincere hope that it will not occur again.

When errors do occur, it is important that the employee contacting the customer does not blame another person, another department or current conditions. This destroys the customer's confidence in the company's methods and procedures. The customer contact employees should explain all of the precautions and safeguards that are

Gas Board

● Essentially the public is a utility's chief board of directors. We have no policy or practice that does not measure foursquare as being in the public interest.—W. M. Jacobs in *Gas Age*.

used to avoid errors of every kind and description, and then state that he cannot understand how this particular error could have occurred, and continue by expressing regret that it did happen.

The cause of every error should be carefully investigated, and action taken to eliminate every possibility of its recurrence.

Review Letters and Notices

All letters and notices should be carefully reviewed to make certain that they are friendly, courteous and sympathetic, and that they do not contain any demands. Letters and notices should also be written in a personal style rather than in formal corporation style.

Samples of Customer Comments

A routine should be established whereby every customer contact employee will report at least one typical customer comment each day. This should include meter readers, customer interview clerks, collectors, bill investigators, telephone clerks, salesmen and service men. These comments should cover both the good and the bad in order that a proper cross section might be secured. Every unfavorable comment should be reported without fail in order that an investigation may be made to determine the reason for the customer having been irritated or annoyed so that anything that may have contributed to it may be discontinued. The good comments should be analyzed from the standpoint of constantly doing more and more of those things which contribute to such comments.

We must be customer relations sensitive

in everything that we do. We must establish high customer relations standards and use those standards as a yardstick by which all of our activities are measured. Doing this does not mean that economic considerations are subordinate because good customer relations are never expensive but always profitable. Every case of customer dissatisfaction costs a considerable amount of money to handle. Good customer relations will materially assist in increasing appliance sales and consumption. With good customer relations, customers will overlook small unavoidable matters which under other conditions would cause irritation.

The word "complain" should be eliminated from the vocabulary of every employee. No customer should ever be considered as complaining about a bill, but merely making an inquiry because it seems too high. The psychological effect of this is that the matter is always handled on a friendlier and more sympathetic basis.

Management must make it its business to know the quality of the performance of each employee as it affects customer relations. The executive who is specifically charged with the responsibility of handling customer relations should be an individual who is thoroughly familiar with every activity in order that he might be in a position to discuss it with the proper department head or supervisor and make constructive suggestions for such changes as will accomplish the desired results.

Customer relations reduced to its simplest terms simply means doing more and more of those things which please the customer, and discontinuing all those things which can possibly annoy the customer.

er's opportunity in the mutually beneficial plan. Among the pertinent points in the joint gas program were: an increase in the Gas Appliance Promotion Division activities; expansion of joint advertising; model kitchen displays as soon as conditions permit; dealer display assistance; more meetings with manufacturers; more dealer meetings and contacts and more assistance by home service personnel. Among those things anticipated from manufacturers were a local resident manufacturer's representative and local warehousing; availability of sales volume figures and periodic manufacturer's demonstrations.

The forty-eight persons, comprised of representatives of twenty gas range manufacturers, gas utilities and the advertising agency of Ketchum MacLeod & Grove, Inc., who assembled at the luncheon recess, heard short addresses supporting the postwar dealer cooperative program by E. M. Borger, president of the Peoples Natural Gas Company, who acted as chairman of the luncheon meeting, C. E. Bennett, president of Manufacturers Light & Heat Company and D. P. Hartson, vice-president of Equitable Gas Company.

Helium Sales at High Level

NEW industrial uses for helium, chiefly in the welding of magnesium and its alloys and now extensively utilized in the aircraft industry, increased sales of this non-inflammable gas to commercial distributors in the United States to more than 250,000,000 cu.ft. monthly during 1944, the Bureau of Mines reports. Helium also is being sent to other private industries working on Army and Navy contracts, but this is included in confidential military distribution figures.

In less than 2 years the monthly average diverted to commercial distributors has increased from about 88,000 cu.ft. in 1942 to the present average of about 250,000 cu.ft. Bureau officials say even greater quantities of helium are available for industrial and medical uses.

Marketing of gas, other than that consigned to the Army, the Navy, and the Weather Bureau, is handled by commercial distributors.

PITTSBURGH GAS UTILITIES CRYSTALLIZE POSTWAR RANGE PLANS

THE three natural gas companies serving the Greater Pittsburgh area were hosts to gas range manufacturers December 19 in an informal conference outlining plans for local range sales after the war.

Chairman of the conference was Christy Payne, Jr., sales manager of the Peoples Natural Gas Company, whose keynote was one of complete cooperation with range dealers and manufacturers. Mr. Payne said that postwar plans are being crystallized on the basis of the experience of ten prewar years in which the three local gas companies carried on a joint advertising and promotion program.

F. B. Jones, manager of sales and market research, Equitable Gas Company, gave a resume of the results of marketing surveys made by his company, the Gas Appliance Promotion Division and the Pittsburgh Press. The Equitable Gas Company made marketing surveys both in 1939 and 1943 and Mr. Jones explained the trend of customer opinion as evidenced by the three surveys.

In the afternoon, W. L. Hutcheson, merchandise sales manager, Manufacturers Light & Heat Company, gave a frank discussion of how the gas companies expect to work in cooperation and harmony with the gas range manufacturers and dealers in protection of the cooking load and in turn what they expect as the deal-



Luncheon meeting at which Pittsburgh plan for range promotion was outlined

Residential Gas Section

J. H. WARDEN, Chairman

J. J. QUINN, Vice-Chairman

F. W. WILLIAMS, Secretary

Residential Gas Program for '45



J. H. Warden
Section Chairman

THE outlook for a productive year in the Residential Gas Section grows increasingly brighter as the plans of the various committees are unfolded. While a few committees are holding up announcement of their programs until all details are completed, the following highlights of the other committee activities make it apparent that the Section is well organized and gaining momentum as the year's activities get under way.

Much of the work completed this year will mark the culmination of plans originating under the able

leadership of B. A. Seiple and C. V. Sorenson, 1943 and 1944 Residential Gas Section chairmen, and great credit is due them and their co-workers for their untiring efforts. Practically all of last year's committee chairmen have consented to serve again thus assuring experience at the helm and no lost motion. It is a privilege to serve with such a splendid team.

The gas industry may rest assured that the Residential Gas Section has not been asleep during the period when merchandise was not available for sale and that, regardless of when equipment is again on the market, its committees will have a program ready to take advantage of every opportunity. We bespeak your continued support and cooperation for all of our committees.—J. H. WARDEN.

Committee on Improving Domestic Gas Appliances

F. M. ROSENKRANS, Chairman



F. M. Rosenkrans

THE first important work before the Committee on Improving Domestic Gas Appliances is the study of current CP gas range requirements with a view of revising and upgrading these requirements as a means of assuring that the CP range will provide the ultimate in performance.

Membership of the committee charged with this important activity is composed jointly of representatives of gas utilities and CP gas range manufacturers.

As a result of the recently completed postwar gas appliance survey, prepared under the jurisdiction of this committee, a large number of suggestions regarding CP ranges were secured from the gas industry.

Various other suggestions have been received concerning changes in CP gas range specifications to enhance the performance and acceptance of the CP range.

Because manufacturers are now engaged in producing war materials and will be faced with the many problems of reconversion, it is the unanimous opinion of CP range manufacturers that there should be no change in present range specifications for CP ranges produced immediately after the war. It is their opinion that if manufacturers have to complicate their conversion and production because of immediate changes in CP specifications, gas companies would not be able to get many CP ranges for sale when manufacturers are in a position to resume production.

During this wartime period, research, development and design activities are being carried on by the gas industry and manufacturers to the extent that facilities are available. Attention of the committee will be focused first on certain CP specifications as they now stand that prevent incorporation of new developments into CP range designs which would greatly enhance performance and acceptance of the range. Re-



J. J. Quinn
Section
Vice-Chairman

visions in these requirements will be considered by the committee to permit the incorporation of advancements in design and performance as soon as such advancements can be included in CP range models by the manufacturers.

It is felt that, through the work of the Committee on Improving Domestic Gas Appliances, a most important contribution can be made to the postwar development of the gas industry.

Domestic Range Committee

WALLACE M. CHAMBERLAIN, Chairman

DURING the war years when gas range manufacture has been so drastically curtailed, the Domestic Range Committee has felt that its two main functions were to (1) do everything possible of a promotional nature to keep the CP seal and the Certified Performance Program alive in the minds of our customers and (2) effectively plan for the postwar improvement of the appliance and merchandising practices.

To this end, the CP range manufacturers have consistently appropriated sizeable sums for trade journal advertising and for promotional programs such as the CP Business Building Program that was distributed to all gas utilities early last year. Most gas companies have responded favorably to this program and, in turn, have distributed the portfolio to the gas range dealers in their respective territories. The program included an advertising mat service as well



Wallace M. Chamberlain

as customer hand-out pieces and special envelopes for War Bonds. The advertising program received coverage in such publications as the House Furnishing Review, Gas, Gas Age, Retail Management, American Gas Journal, Hardware Age, Canadian Gas Journal, Hardware Retailer, Gas Appliance Merchandising, Architectural Forum, Electrical Merchandising, Architectural Record, Electric Home Equipment Dealer, Practical Builder, National Furniture Review, American Builder, Retail Home Furnishing and What's New in Home Economics.

Several meetings were held following the completion of the industry-wide survey on improved postwar appliances, and many recommendations were made to the Committee on Improving Domestic Gas Appliances.

Committee personnel has been maintained on the system of equal representation by CP manufacturers and gas utilities. Gas utility members of the committee are CP Regional Managers, covering all geographical sections of the United States. Each Regional Manager has been responsible for the appointment of State Managers in his territory so that we will enter the postwar merchandising era with an organization geared to give complete coverage in the dissemination of information as well as in the promotional aspects of the CP Program.

The most recent meeting of the whole committee was held in Cleveland the latter part of November at which time the promotional program for the first six months of 1945 was decided upon. Manufacturers have voted an appropriation of \$35,000.00 and have hired James I. Gorton, formerly of Wortman, Barton & Gould, Inc., on a full-time basis for the promotion of the CP range.

The 1945 program will consist of full page advertisements in the above publications which cover every major dealer field, and domestic science teachers and students.

In addition to these trade paper advertisements, a twelve page, two color Dealer Kit will be available, provided sufficient interest is shown by utility companies and enough advance orders received to underwrite the initial preparation costs. This kit is designed to place in the hands of utility companies material which they can use in demonstrating to dealers the aggressiveness with which the gas industry is going to attack postwar markets and to show dealers definite steps they can take to profit by pushing CP gas ranges. Included in this kit will be a 27" x 36", two-color poster, a prospect card, bill stuffer, five ready-to-run advertisements, a description of the enlarged A. G. A. advertising, and promotional programs. Samples of the material will not be contained in the kit, and it is suggested that utilities make up a promotional package containing a supply of material and make it available to each dealer with the kit. Kits and samples of the material will be forwarded to all utility companies.

A four page CP news digest will be forwarded each month to gas utilities, outlining successful sales plans being used and items of interest to sales managers.

A list of publicity articles originating in connection with the 1944 program has resulted in more than sixty two full pages of news stories on "CP" in trade papers, and the 1945 program calls for a substantial increase in publicity.

The first advertisement in the 1945 campaign will give a complete story on the "CP" program and will make available a reprint which will be effective in telling dealers the purpose, history and future plans of this program.

The committee has pledged full support to the Coordinated Gas Kitchen Program, and individual members have been active in its formulation. Much of our promotional work will be done cooperatively with the Coordinated Gas Kitchen Committee.

Recognizing the increasing importance of dealer cooperation, the committee has invited representatives of the Master Plumbers Association, the Home Appliance Section of the National Retail Dry Goods Association, the National Retail Hardware Association and the National Retail Furniture Association to serve on an advisory committee that will meet periodically with the Interim Committee in the future.

A representative of the Liquefied Petroleum Gas Association has also been added to the committee membership.

H. Vinton Potter, director of the Coordinated Gas Kitchen, and Floyd M. Rosenkrans, chairman of the Committee on Improving Domestic Gas Appliances, are also serving as associate members of the Domestic Range Committee.

Committee on Selection and Training of Sales Personnel

R. E. WILLIAMS, Chairman



R. E. Williams

Dr. Robert N. McMurphy's comprehensive workable program available to the gas industry.

Secondly, in order to be fully prepared for intense postwar competition, the committee has arranged an industry-wide program for indoctrination and sales training. This program was described in the January A. G. A. MONTHLY.

Salient features of this two-fold program have been outlined to the industry in a

series of meetings from Coast to Coast. These meetings have been held in Boston, New York, Pittsburgh, Chicago, Kansas City, Dallas and Atlanta. In cooperation with the Pacific Coast Gas Association, additional meetings will be held February 2 in Portland, February 5 in San Francisco, and February 8 in Los Angeles.

It remains for this program to be put into action as early as possible in 1945. All gas companies are strongly urged to place their commitments for tentative purchases of the training course so that the committee may start production. No further action can be taken until this step is completed and probable sales determined. It is a forward-looking program that deserves the industry's wholehearted support.

Committee on Housing

LEON OURUSOFF, Chairman



Leon Ourusoff

THE field assigned this committee is recognized as very important and extremely ramified. New responsibilities become uncovered as activities spread. To cope with these enlarged responsibilities, the organization of the committee has been expanded to include two vice-chairmen,

two new subcommittees and additional members. With this set-up, it is hoped that the committee will broaden its field of activity and maintain past standards of performance.

Electric & Gas Co., Newark, and N. E. Wooters, Servel, Inc., Evansville, have been

H. Preston Morehouse, Public Service appointed vice-chairmen of the committee, and in addition head up important subcommittees.

Following is an outline of the 1945 program:

Publicity and Specifications (H. Preston Morehouse, Chairman)

A model of energy and effective organization, this group has completed in twelve months the preparation and issuance for industry's review of the new Manual for Architects and Builders. The Manual is scheduled to be published during the first half of this year. The price will be approximately \$3.00 per copy and the backlog of orders now stands at 6,000 copies.

There is much left to be done in connection with further developing and adequately distributing the new Manual. It appears as if the task of keeping this book current will become an important permanent function of this committee.

In addition to this absorbing activity the subcommittee is now considering a study of the AIA filing system, particularly the Index Section. Certain portions thereof per-

taining to gas service and appliances are antiquated and inadequately captioned. The AIA will welcome the committee's cooperation in this matter.

Prefabrication

(N. E. Wooters, Chairman)

Activities of this group will be expanded. Regional meetings have been organized and already started. Relations with prefabricators will be strengthened.

It is earnestly hoped that the A. G. A. Laboratories will find it possible to fulfill the request made by many prefabricators for our assistance in solving condensation problems. Such assistance would place in our hands a valuable tool for promoting gas service in this modern field of construction.

The committee will keep in close touch with organizations interested in developing standards and specifications for prefabricated houses.

Cooperation with Housing Associations and Agencies

(L. Macomber, Chairman)

The program for the coming year is planned as a continuation of past years activities. Membership has been reinforced to allow for better regional coverage. Contacts will be easier and more effective because the ice was broken last year. As the Manual becomes available it will provide opportunities for presenting and discussing it with key men in the building industry. Several groups have been added to last year's list of assign contacts.

Mortgage Financing Institution

(C. G. Young, Chairman)

This new committee is being organized to stimulate the exchange of information between the gas industry and financial groups comprised of:

- Mortgage bankers
- Insurance companies
- Bank and trust companies
- Building and loan associations

These interests are at the present time planning future housing projects. Specifications are subject to the control of their technical staffs or advisors. The committee will keep these institutions informed on the advantages of gas and on the activities and achievements of our industry.

City Planning and Rehabilitation

(B. T. Franck, Chairman)

Urban decentralization is impending. Yet, disorderly and sweeping suburban expansion that causes collapse of urban real estate values can be checked to a certain extent through planning and organized efforts of citizens, property owners and business groups. It is in the interest of our industry to cooperate with such groups.

Scattered, though effective efforts in this direction were initiated by several utilities in the past year. Milwaukee was a brilliant example.

The objectives of this committee are:

(a) To keep in touch with all national activities pointed at city rehabilitation and the promotion of new home ownership,

(b) To interpret and correlate information received from gas utilities,

(c) To make recommendations to the industry.

Cost of Utility Services

(E. P. Kramer, Chairman)

This subcommittee has set two goals for this year:

First, to collect, analyze and summarize as much data as can be obtained on cost of appliance maintenance in housing projects,

Second, in cooperation with the Distribution Committee, to develop and publish a study of typical distribution system designs applicable to various categories of housing projects.

General

It is proposed to continue:

(a) Active cooperation with other A. G. A. committees, particularly in connection with the New Freedom Gas Kitchen and ventilation research,

(b) Memberships in appropriate trade groups,

(c) Watchful observation and reporting to the industry of noteworthy developments in the building industry.

Refrigeration Committee

J. L. JOHNSON, Chairman



J. L. Johnson

THE Refrigeration Committee was originally a sales promotion committee. When gas appliance merchandising is resumed, the committee will, undoubtedly, again be primarily concerned with the sales promotion efforts of our industry in the matter of residential refrigeration with

gas service.

For the coming year, members of the committee have developed, through correspondence, appropriate subjects for consideration and later presentation to our gas utilities. During the present Association year, the Refrigeration Committee expects to concern itself with the following subjects:

1. Product Training for Salesmen.
2. Dealer Merchandising.
3. Product Development and Improvement.
4. National and Local Advertising.
5. Other Local Utility Promotion.
6. Increased Recognition in Educational Institutions.

As rapidly as today's unusual conditions will permit, the Refrigeration Committee expects to release helpful material on all of these subjects for the consideration, guidance and use of the gas utilities of our Association.

House Heating and Winter Air Conditioning Committee

J. C. SACKMAN, Chairman



J. C. Sackman

THE function of the House Heating and Winter Air Conditioning Committee, membership of which is comprised of gas utility representatives and gas heating equipment manufacturers, is to promote the use of gas for heating in the residential field.

During the past three years, lacking gas heating equipment to promote and sell, the committee through its Subcommittees on CP Requirements, has concentrated in preparing CP Requirements for Forced Warm Air Heating Equipment and Its Installation.

At a recent meeting of the CP Requirements Subcommittee, considerable progress was made toward the completion of the requirements and it is expected that the next meeting of the subcommittee will result in their final adoption.

A CP Promotional Subcommittee is active in setting up a Promotional Program for use by the industry when appliances become available for sale. During the coming year, it is planned to set up a Subcommittee on Direct Heating and a Subcommittee on Promoting Summer Air Conditioning.

Window and Store Display Committee

GEORGE W. BROWNE, Chairman



George W. Browne

THE list of contributors to the latest A. G. A. Window & Store Display Bulletin has increased, in the last three years, from an average of twelve to more than forty contributors per issue. The committee is proud of this increase and credits it to the established policy of placing the

accent on displays that could be adapted to the use of small as well as large utilities.

During the coming year the committee will continue to contact display poster manufacturers and supply them with information pertaining to A. G. A. National Advertising so that utility display men may purchase display material that ties in with it, thus increasing the value of both of these advertising mediums.

Plans include the early publication of two news letters; one to contain all the material available on coordinated gas kitchens that would aid displaymen to pro-

mote this important activity; the other to be aimed at gas appliances and services.

A National Window Display Contest was conducted in conjunction with the Fifth War Loan Drive. This contest, sponsored by the Display World Magazine, and publicized for the gas industry by this committee, received more than 2,000 entries from all types and sizes of retail stores throughout the country. Gas industry display men won twelve of the two hundred citations awarded by the Treasury department for outstanding window displays. This is proof of the valuable work our men are doing and it establishes a record of which we may be rightfully proud.

The Window & Store Display Committee has sponsored a contest in conjunction with the Sixth War Loan Drive. The contest is completed and results are announced elsewhere in this issue of the MONTHLY.

The committee is anxious to receive photographs of window displays from all member companies so that the next bulletin will contain examples of the work of all of our gas utility displaymen.

Home Service Committee

COLLEEN FOWLER, Chairman



Colleen Fowler

THE Home Service Committee has set up plans for a series of regional Home Service Work Shops to be held in the spring of 1945. The purpose of the Work Shops, which is limited to gas company home service personnel, is to give impetus to continued cooperation with the govern-

ment food and nutrition wartime programs. The Program will include actual food and equipment demonstrations, discussions of wartime home calls, factors governing finished products in food preparation and new food developments. There will also be a refresher program in home service organization and personnel training, and "Questions and Answers on Kitchen Planning, Now and Tomorrow."

Prior to the Work Shops, two subcommittee assignments will be available for Home Service Committee discussion at a meeting preceding the Work Shops and for general presentation on the Work Shop programs. These will include a Students' Handbook on Home Service for distribution to students and teachers in colleges to attract their interest in home service work as a career and give them a picture as to what the work entails and how best to train for it. The second assignment is that of revision and enlargement of the home service booklet of 1939 entitled "Training Course within the Company." The final printing of these reports will be carried together under the general subject of home service training.

During the war, the Home Service Committee has released five printed Interim Bulletins on phases of cooperation with the national programs of food and equipment conservation as follows: "Home Service Volunteers," "Wartime Home Service," "Uncle Sam Wants It To Last" (care of equipment), "Visual Aids in Wartime Demonstrations," and "Home Service Programs for Young America." Other subject matter has been prepared for use in food preservation and wartime home calls. This wartime material has quite adequately covered the subject needs of home service departments, and, therefore, it is planned that no additional subject matter reports will be prepared in this year's program of work.

Water Heater Committee

C. S. STACKPOLE, Chairman



C. S. Stackpole

AT recent meetings of the Gas Water Heater Committee a great deal of time was devoted to a discussion of the answers which had been received to the A. G. A. Gas Water Heater questionnaire which was sent to member companies. The answers indicated a real interest in a CP water heater promotional program, and the committee decided to devote a great deal of its effort toward completing the program in 1945.

Frank H. Trembly, Jr., chairman of the CP Specifications and Installation Subcommittee, has held several meetings and tentative specifications were drawn up and subsequently submitted to the entire committee for review and discussion. These suggested requirements were then sent to member gas companies and gas water heater manufacturers for comments, criticisms and additions. Many answers containing constructive suggestions and criticisms were received from both of these branches of the industry. These suggestions have been carefully considered, and specifications with changes are again being drawn up for further submission to those interested in order to bring about adoption as rapidly as possible.

Another subcommittee under the chairmanship of Roger Gordon of the Washington Gas Light Company has been assigned the task of drawing up the all-important promotional phase of the CP program.

While the CP program continues to have top priority in the committee's activities, other matters are also receiving due consideration, including the following:

1. The matter of production and sale of gas water heaters under existing limitations will continue to be a subject of interest, and the committee will continue to devote attention to this very important matter as well as to the question of adequate repair and replacement parts.

2. It is the consensus of the committee that gas water heating as such has been receiving too little publicity in the trade journals and other related publications recently. As a result, William Schmidt of Long Island Lighting Co. was assigned the task of suggesting ways and means of obtaining

GREEN TROOPS DON'T WIN BATTLES!

YOU would not willingly send American boys into battle until they are prepared to fight—their success depends on training.

The same thought applies to your salesmen—it would not be fair to them—and certainly would be a gross injustice to your company—to throw them into the "BATTLE OF THE FUELS" without adequate training.

OUR COMPETITORS ARE ALREADY MOBILIZING!

Practical training of residential gas salesmen and dealers is an absolute must if we are to meet successfully severe and unprecedented competition for the consumer dollar in the postwar era.

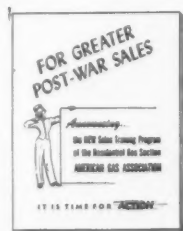
Your committee has given thorough study to the problem. Our conclusions have been laid before you in regional meetings and in the broadside illustrated below. We believe they merit your careful review and consideration. If you have not received a copy of the broadside, please get in touch with the American Gas Association, 420 Lexington Ave., New York 17, N. Y.

To produce the two courses described in the broadside and get them into operation will take an investment of many thousands of dollars, and fully a year's time. If we are going to be ready, we must start now!

Your committee cannot undertake this responsibility without your support. Neither of the courses described will actually be produced until a sufficient demand for it appears.

We need to know at once the extent to which your company will probably participate in this program. A form for sending us a statement of your intention is attached to the broadside. Will you not have it filled out and returned to us promptly?

R. E. WILLIAMS,
Chairman, Committee on Selection and training of Sales Personnel



suitable material for publication in the proper branches of the trade and consumers' press. Articles prepared by home service directors are to be submitted to Jessie McQueen for inclusion in A. G. A. home service bulletins and any possible publicity in women's magazines. Mr. Schmidt's own article entitled "The Gas Industry's New Equation $1 + 1 = 4$ "* has already aroused a great deal of interest in the industry, and reprints have been made for the Canadian Gas Association and the water heater division of A. G. A. E. M., and copies have been distributed among the sales managers of member companies of A. G. A. It is planned to continue these publicity efforts during the coming year.

3. A cooperative plan has been worked out with the Cleanliness Institute of the Association of American Soap and Glycerine Producers. Under this plan letters have been sent to A. G. A. member company sales managers offering to place them on the Institute's mailing list to receive its publicity material. The committee feels that this material can be of invaluable assistance in water heater promotional activities and hopes that the sales managers will take advantage of the Institute's offer.

4. It is planned to make greater use of the Home Service Bureau personnel in connection with water heater promotions, and in line with this a home service representative has been chosen to serve on the committee for the coming year.

5. A subcommittee has been appointed to draw up a suggested contest for home service representatives in order to obtain material in regard to uses for hot water and how automatic gas water heating may be brought into the Home Service Bureaus' activities.

6. The importance of adequately sized automatic gas water heaters in connection with the use of automatic washing machines in the postwar era has been noted by the committee. It is the committee's plan during the coming year to call this very important matter to the attention of the gas industry in publicity releases, emphasizing the gas revenue possibilities which could result from the promotion of the automatic washing machine idea, as these appliances require a plentiful supply of hot water.

7. The question of tank replacements and guarantees has received attention and

* See November 1944 "A. G. A. Monthly."

Face Lifting

● The gas water heater of the postwar world will look less like a water heater and more like its fellow gas appliances, if P. C. G. A. crystal-ball gazing is correct. It seems likely that it will be designed to fit in a corner of the kitchen or the service porch, flush to the wall and flush to the floor. The draft hood will probably be concealed within the heater, and the whole exterior appearance will be neat and attractive. Along with this will go improved performance, longer life and simplified operation.

will continue to receive consideration. It has been suggested that the manufacturers consider length of guarantees, the differential in time between ferrous and non-ferrous tank guarantees, uniformity of guarantees, and the matter of standing reasonable service costs during the guarantee period. A. G. A. E. M. representatives on the committee indicated that these matters will be discussed by their branch of the industry.

8. The matter of comparative values of gas versus other fuels for water heating is also under discussion, and it is the com-

mittee's opinion that the proper postwar committee has this matter under consideration, and it is the hope of the Water Heating Committee that similar data may be made available for all domestic gas appliances.

9. The committee has received and continues to receive a number of letters from sales leaders in the industry. These letters contain a number of valuable suggestions.

In conclusion, the Gas Water Heating Committee welcomes any and all suggestions or criticisms which will make its contribution to the industry more valuable.

NEW FREEDOM GAS KITCHEN DISPLAY AT HOME BUILDERS SHOW

SEVERAL thousand top-flight builders and others interested in the home building and construction industry attended the Builders' Exhibition sponsored by the National Association of Home Builders of the United States at the Hotel Sherman, Chicago, January 15-20.

The exhibit included displays of building materials, equipment and appliances by representative and nationally known manufacturers and distributors. It was the first show of its type held exclusively for home builders.

In addition to the exhibits a series of interesting and informative clinic meetings were held which were addressed by executives in the government and private home-building industries.

H. Vinton Potter, director of the New Freedom Gas Kitchen Program of the American Gas Association spoke January 26 on "What's New in Gas Appliances," stressing the New Freedom program and what it means to the home-building industry. More speakers representing the gas industry participated in other sessions.

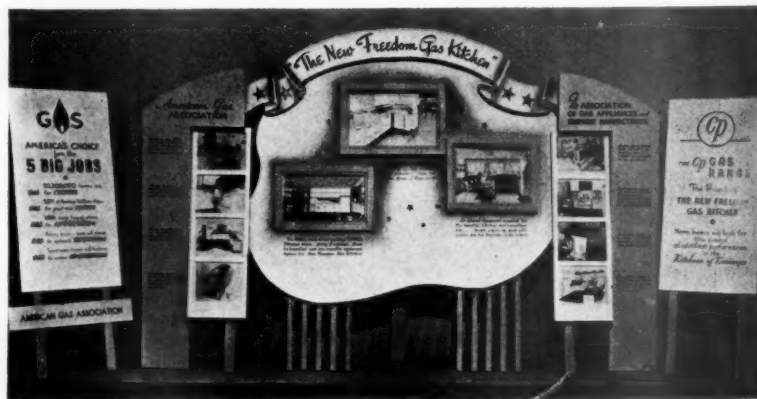
An effective and attractive display featuring the New Freedom Gas Kitchen was prepared by the American Gas Association in cooperation with the Association of Gas Appliances and Equipment Manufacturers.

A picture of this display is shown above. It occupied a space approximately 12 ft. long, 6 ft. high and 2½ ft. deep; the color scheme is blue, white and ivory.

In addition to this display, American Stove Company, George D. Roper Corp., Servel Inc., The Bryant Heater Co., Surface Combustion, A. O. Smith Corp. and Mueller Furnace Co. had attractive displays in the show.

One-Man Kitchen Installation

MAKING its first bid for the postwar new-homes kitchen market, Mullins Manufacturing Corp., Youngstown Pressed Steel division, Warren, Ohio, is now distributing a 24-page booklet entitled, "The Builder's Kitchen," which bids for builders' attention. It makes the point that the Youngstown product saves builders unnecessary labor costs, that only one man is required to set up and install the steel cabinet sink and cabinets. Installation of the latter is simplified, also base cabinet installations are shipped from the factory already equipped with sub-bases and hardware, thus relieving builders of time required in fitting cabinet doors and drawers.



Striking gas kitchens were keynote of A. G. A.-A.G.A.E.M. display at Home Show

Industrial & Commercial Gas Section

HARRY W. WRENCH, Chairman

HARRY A. SUTTON, Vice-Chairman

EUGENE D. MILENER, Secretary

Gas Ideal for Baking and Drying

BY F. H. FABER

*Sales Manager, Despatch Oven Co.,
Minneapolis, Minn.*

GAS is the ideal fuel for heating industrial baking and drying ovens. That is my personal opinion and my own company wholeheartedly supports this view. Out of every 100 industrial ovens sold by my company, 72 are gas-fired. Most of the others are electrically heated, going on ships, on the battlefields and many other places where gas is not available. Only a few ovens are oil- or steam-heated.

It is not my intention to criticize or condemn any particular types of heating. My own opinion is that each method has distinct advantages for certain applications, and that no one method is a cure-all or the best for every requirement. The problem simply resolves itself into getting the right method of heating for the right job.

Infra Red Heating

We can review the subject of infra red heating to advantage by recalling the day when you went into the automobile service shop and saw a man applying heat to a repaired fender or body section from one, two or three infra red lamps mounted on a stand. Such early open infra red lamp installations caused workers to have ill effects from the fumes. Various manufacturers, under pressure of State industrial commissions, placed hoods over the top of the infra red lamp system to which they attached exhauster equipment. As soon as the exhaust fans started to drive the fumes out of the room, it immediately started to aggravate temperature differences due to cold room air striking the bottom of the parts being dried. As more 70 degree air hit the part, the differences in metal temperature were increased, and finish baking was more uneven.

It was also noticed that as soon as the exhauster equipment was put into operation, the baking and drying took longer and it was either necessary to leave the parts in the unit a little longer time, sacrificing some of the production volume, or it was necessary to add additional banks of infra red lamps if production was to be maintained. Of course it was obvious that the cost per unit of production immediately went up, too.

We have been talking about infra red lamps on open racks mounted on open structural steel frames. As some of the manu-

facturing engineers realized the high cost of heating ventilation air and also heating of the product itself by infra red lamps, they believed that if they could enclose the infra red bank system that they would accomplish a great deal in the way of power savings, and that they might also be able to increase their production. Some of these enclosures were uninsulated. Others were more elaborate and had all the way from 1" to 4" of rockwool insulation. Needless to say, a saving was immediately effected which varied all the way from 5% up to 27%, depending upon the before and after condition of the set-up.

Some of these men believed that further savings could be accomplished if they could use convection heating along with the radiant heating. Some manufacturers caused the fresh air to come in around the sockets of the infra red lamps and proceed to the top of the unit behind the lamp. Then by

means of an exhaust duct in the bottom of the unit connected to an exhaust fan, they caused this so-called preheated air to come downward around the part and be exhausted. See Fig. A.

Another manufacturer caused the fresh air to come in around the socket; however, as the air was preheated, it was introduced around the oven through openings around the lamps and again caused to blow downward into a duct at the bottom (Fig. B) and exhausted by a fan. Naturally there was an improvement in operating conditions. However, some of the factors peculiar to infra red lamp heating still existed. After the lamps had once been adjusted for the particular part being processed, the only element left for control was time. There were so many factors that affected the final baking result and which were so variable and so unpredictable that, in the estimation of our engineers, it fell short of being the ideal system for all finish baking problems. For instance, to mention a few, the temperature of the metal varied immensely with the same setting of lamps depending upon the color that was being processed. This temperature-varied equally

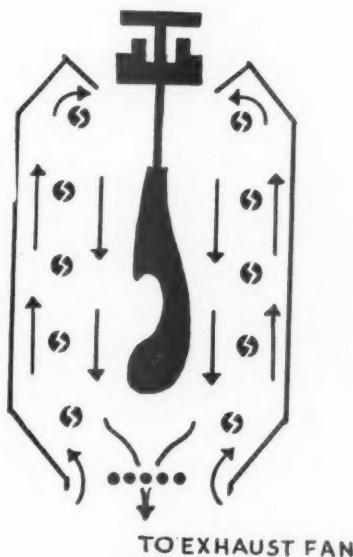


Figure A

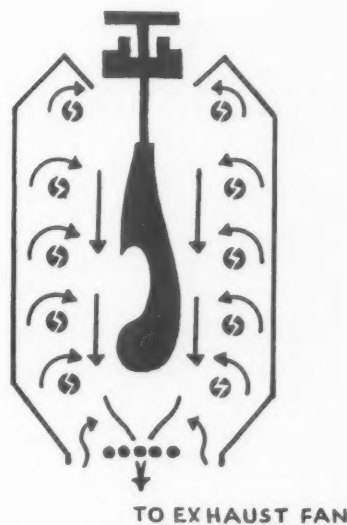


Figure B

Abstract of paper presented before 1944 Midwest Industrial Gas Council.

as much if the surface were glossy or if it were dull—if it were flat or if it were round—if it had an even contour or if it had an uneven contour.

The time factor was not stable from day to day. A new lamp had a high efficiency, and an older lamp had a lower efficiency, and as the natural deterioration of the lamp took place the time factor would have changed to accomplish the same results.

It was also found that small voltage changes had a considerable effect on the intensity of the radiation. Maintenance was high, as was operating cost.

Our engineers believed that the air which was going to be used for ventilation purposes should be introduced into the infra red oven at a predetermined temperature, and that it should not rely upon temperatures which might be obtained as the air passed by sockets, the backs of reflectors, along the sides of the lamps and the like. So they set about designing a small heating system of the convection type which would introduce *just the amount of air needed for ventilation*. This air could be introduced at temperatures from those of the room up to 50 degrees in excess of the parts temperature.

A series of tests were conducted utilizing this new arrangement, and the results which were obtained were amazing. It was found that a given finish could be processed in less time in the Despatch Convection-O-Ray system than it could be processed in the standard infra red unit alone. On one particular finish which required approximately 30 minutes in the standard prewar convection oven, it was found that a satisfactory hardness and quality could be obtained in a standard infra red unit in approximately seven minutes, and that in the Convection-O-Ray system, it required just a little more than three minutes.

I might state here that when our engineers conceived the idea of Convection-O-Ray, they did so primarily with the thought of helping the firms who had put in standard infra red systems, and who had complained about the results which they had obtained. It was the engineers' thought that, if some method of introducing make-up air could be added to the infra red system, many of

these complaints could be eliminated. It was also found that, by using preheated air under automatic temperature control, various colors could be more easily accommodated and many of the other factors of uneven baking minimized.

In spite of all the work which was done on Convection-O-Ray and standard infra red systems, the conclusion of our engineers is something like this:

Infra red or Convection-O-Ray may be used satisfactorily for the processing of small parts that may be heated evenly from infra red lamps on which finishes that will take a thermal shock have been applied. Also the finishes must be of a type that will not discolor when processed with infra red rays.

We believe that the adaptation of infra red will vary depending upon the type of the finish—whether it is an air dry or a modified air dry or a high quality baking enamel.

Our engineers cannot agree with those who claim that infra red bakes from the inside out, and that you can merely heat the small section on the surface of a metal and forget about bulkier sections of metal. One particular test was run with a sensitive white refrigerator finish on a 22 gauge sample plate; on a 16 gauge sample plate, and on a 3/16" sample plate. The time cycle and temperature of the infra red system was set up so that it would bake the finish on the 16 gauge metal perfectly. All samples were run into the oven at the same time and removed at the same time.

According to paint experts, the finish on the 22 gauge metal was 300% baked; the finish on the 16 gauge metal was 100% baked, and the finish on the 3/16" plate was only 28% baked. Now if infra red could heat and process only the surfaces of the metals, all of these finishes should have come out the same. The fact that they did not come out the same proves the fact that baking time will vary depending upon the thickness of the cross section of the metal. Also there was slight discoloration.

As all types of finishes will not process without discoloration under infra red rays, our engineers started to work on a new angle, believing that the baking of finishes was a matter of time and temperature for a given finish. Having records of all metal temperatures of samples that were run in the infra-red ovens and in the Convection-O-Ray ovens, they set about to bake the same sensitive white refrigerator finishes in convection ovens. The oven in which the test was made was equipped with a high capacity heating system and a high capacity air circulating system. Despatch gave the name of "Surg Bake" to this new system, because it was their plan to surge the oven temperature in order to make the metal temperature of the sample follow a predetermined curve.

In other words, if a finish was to bake at 275 degrees F. the actual oven temperature may for the first part of the processing time be as high as 325 or 350 de-

grees F. The plan was to drop the surge bake at such time that the reducing temperature of the oven and the increasing metal temperature of the part would reach 275 degrees at approximately the same time. To the amazement of Despatch engineers, it was found that the hardness of the finish and the quality of the finish was identical in the surge bake oven as it had been in the Convection-O-Ray oven, and in addition it had no discoloration. It was also found that, regardless of the shape of the part, the results were uniform. It was found that all colors could be processed, and the only changes that needed to be made were the settings of the temperature control instrument. There was an amazing flexibility that made the surge bake system practical not only for existing finishes, but for future finishes that might be developed.

Paint manufacturers have indicated to us that the present day finishes are of much lower quality than pre-war finishes, and they indicated also that postwar finishes will be of a much higher quality.

Many have expressed the opinion that the convection type oven would be more practical as an all-round unit than either the infra red or the Convection-O-Ray unit. This thought seems to be borne out by the larger manufacturers, as in the laying out of their postwar lines they seem to be leaning distinctly toward convection ovens.

The surge baking system is especially adaptable because it can be used on batch-type ovens as well as on conveyor-type ovens.

Surge Baking Oven Test

A test was run on various thicknesses of metal with the infra red lamps and in the Convection-O-Ray oven, and a variety of results was obtained. We ran the same experiment in the surge baking oven, and lo and behold, when we duplicated the temperature curve on the 16 gauge sheet and took it out of the surge baking oven in exactly the same time as we had taken a similar sample out of the Convection-O-Ray oven, we found that the other two samples were overbaked and underbaked in the same manner that they had been in the Convection-O-Ray unit. All of this makes our engineers believe that the baking of finishes is a matter of time and temperature for a given finish and metal part. It is the limitation of the finish or the limitation of the part that determines the proper time and temperature relationship.

The tests related above prove that when you are processing parts which have different metal section thickness, you must reduce your speed of baking. By that, we mean, you must decrease your temperature and increase baking time so as to bake out the heaviest sections properly without permitting lighter sections to become overbaked. This is important to remember when you are discussing finish baking problems with your customers and prospects. Sometimes these amazingly short processing times are not practical for production lines.

We believe that when speedy baking is ac-

Gas Music

● Every Army and every Navy Band gets its final touch of zip from the cymbals so militantly played by the man in the last row. While cymbal-making is the work of skilled artisanship, modern industrial furnaces help produce better quality and increase speed of production. So pleased with industrial gas is The Avedis Lildjian Co., Quincy, Mass., leading cymbal-makers, that they enthusiastically say: "Gas has proved to be the best method of heat treating for us. We've tried everything else, and the cost is cheaper in the long run."

complished, it is because there is a definite temperature head condition in the unit whether applied by radiant heat source or by a convection heat source.

For finish baking ovens, filtered air is desirable, and it should be used whenever possible.

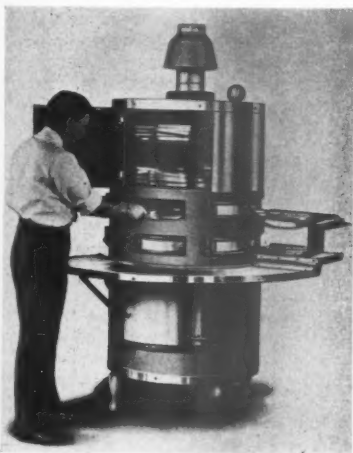
The modern conveyor ovens of the post-war era will be zoned more than they were in the pre-war era. This creates a condition of greater flexibility.

Rotary Gas Cooker

SEVERAL months of commercial restaurant operation lie behind the Groetchen Rotary Cooker, new product of the Groetchen Mfg. Co., 126 N. Union Ave., Chicago 7. It promises not only to speed short orders but to put new precision into the traditionally inaccurate terms of "rare, medium, or well-done."

Backbone of the machine is a vertical, motor-driven shaft which supports two heavy, 29-in., cast-iron, cooking disks, revolving them at a constant speed through a complete circle in exactly five minutes. Cooking takes place under the reflected heat of special gas burners that impinge their flames on fire brick and provide a constant temperature of 850° F. Steaks, chops, fish, hamburgers, what-have-you are laid in aluminum casseroles that have been pre-heated to 450° F. in one or the other of the two top compartments of the machine.

If you want your steak "medium," the cook places the casserole on one of the iron disks through the centermost of three doors opening to each disk, and it will be delivered automatically in four minutes by means of a conveyor at the machine's right. If you want the steak "rare," it is put in a left-hand door to get a three-minute broil; if "well-done," in a right-hand door to get the full cooking cycle of five minutes. If there is a job of roasting or baking to be done, it can be handled in one of the casserole-heating compartments at an appropriate temperature.



Newly developed rotary gas cooker

AMERICAN GAS ASSOCIATION

INDUSTRIAL AND COMMERCIAL GAS

ADVERTISING FOR FEBRUARY

The National Advertising Committee of the Industrial and Commercial Gas Section, J. P. Leinroth, chairman, and F. B. Jones, vice-chairman, announces that full page advertisements will appear in the trade and business magazines listed below during the month of February. These advertisements are prepared in cooperation with the Committee on National Advertising as part of the industry's national advertising campaign.

GENERAL MANUFACTURING

GAS—the precision fuel. BUSINESS WEEK (Feb. 10— $\frac{3}{4}$ page)

GAS—the modern industrial fuel. BUSINESS WEEK (Feb. 24— $\frac{3}{4}$ page)

Bridgeport Brass Prides Itself on *GAS* Heat Treating Equipment.

MODERN INDUSTRY (Feb.— $\frac{1}{2}$ page)

How *GAS* advances the science of heat treating. INDUSTRIAL HEATING

METALS INDUSTRY

How *GAS* advances the science of heat treating.

THE IRON AGE (Feb.) • METALS AND ALLOYS

GAS-FIRED furnaces help produce the new Tubular Railway Axles.

METAL PROGRESS

Depend on *GAS* . . . to help win your Post-War goals.

STEEL (Feb. 5)

CERAMIC INDUSTRY

GAS—the precision fuel.

CERAMIC INDUSTRY

GLASS INDUSTRY

GAS—the precision fuel.

GLASS INDUSTRY

CHEMICAL FIELD

GAS—the most flexible fuel.

CHEMICAL & METALLURGICAL ENGINEERING

HOTEL AND RESTAURANT FIELD

A Profitable Eating Place that grew with *GAS*.

AMERICAN RESTAURANT • RESTAURANT MANAGEMENT

Owner of Deluxe Restaurant calls *GAS* Indispensable.

HOTEL MANAGEMENT

St. Barnabas (Newark, N. J.) Achieves Economy and High Quality

Diet with *GAS* Equipment. INSTITUTIONS (Feb. 2/9 page)

SCHOOL FIELD

A Powerful Pointer for P. W. P.'s.

NATION'S SCHOOLS

HOSPITAL FIELD

St. Barnabas (Newark, N. J.) Achieves Economy and High Quality

Diet with *GAS* Equipment. MODERN HOSPITAL

FOOD PROCESSING

Two small food processing companies that prosper with *GAS*.

FOOD INDUSTRIES

BAKING FIELD

Cincinnati's Hotel Gibson uses *GAS* for all its famous Cooking and

Baking. BAKERS HELPER (Feb. 13) • BAKERS WEEKLY (Feb. 5)

Technical Section

L. E. KNOWLTON, Chairman

LESTER J. ECK, Vice-Chairman

A. GORDON KING, Secretary

Clearing Stoppages from Gas Services*



T. J. Perry

CLEARING service stoppages is not a new topic but the idea of clearing them by removing foreign materials from them may be considered a recent development when compared with the older method of pushing these troublesome materials back into the mains by one means or another. Perhaps we should call the newer method "cleaning" instead of "clearing."

Both methods have advantages since proper disposal of the material depends upon its nature. Water, for example, may be forced back into the main where it will flow to the nearest drip and be subsequently removed in quantity by drip trucks, but the type of stoppage we are dealing with here consists of hard, heavy materials which analyses indicate are chiefly composed of ferric oxide.

An analysis of a sample of the kind of material I refer to is included to indicate that it packs very tightly, becomes hard and is extremely difficult to remove. The sample may or may not be representative since we also encounter other types of materials which cause service stoppages, but they are not pertinent to this discussion.

Sample of Material Removed from Service

ANALYSIS	
Moisture and light oil	2.76%
Heavy oil and gum	2.15
Ferric oxide, Fe_2O_3	80.94
Sand, SiO_2	0.90
Water of hydration, by difference	13.25
	100.00%

Service stoppages first come to our attention when the customer complains of poor gas supply or that the supply has failed altogether. It is necessary to send a serviceman to investigate the complaint since the customer is hardly in a position to

BY T. J. PERRY

*Superintendent, Customers' Service
Division, The Brooklyn Union Gas
Co., Brooklyn, N. Y.*

give much detail about it. Frequently the cause of the complaint is found to be trifling and the serviceman corrects it without difficulty and with little inconvenience to the customer, but when a stoppage occurs in the service the situation is more complex. Since we do not permit a lone serviceman to correct service stoppages, our practice requires him to report his findings to his dispatcher who sends a crew of two men to the premises. They complete most of their jobs but fail in a small percentage of the more stubborn cases and these are the jobs we are discussing today.

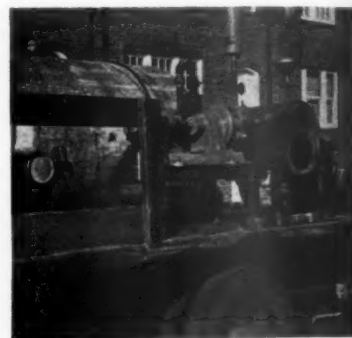
Old Practice Costly

Before the development of our vacuum cleaning unit these stubborn cases on which the two-man crews failed would be turned over to our Street Department who found it necessary to install new services in many instances. This was unsatisfactory because installation of a new service is in the nature of a major operation of costly proportions. The work depends a good deal upon the weather, city permits to open streets, etc. and currently a shortage of manpower because of wartime conditions. These things are time-consuming and costly and add up to the most serious objection which is from the point of view of the customer who must remain without his normal gas supply for varying periods of time ranging from several days to several weeks. The vacuum cleaning unit has reduced the time element to a matter of hours and materially reduced the cost of correcting those stubborn stoppages which the service crews could not clear.

It has been our practice to break these stoppages with a snake or Sanger waste rod supplemented by the use of a hand pressure pump using a small quantity of air designed to give the stoppage a sharp jolt to release it. When the stoppage is broken the pressure of gas behind it forces the materials out through the cellar end of the service where they can be trapped in a disposal can or otherwise disposed of. More often than not, however, the pressure pump drives these materials back into the main. We have also found that the hand pressure

pump frequently packs these materials tighter and consequently makes them more difficult to remove. Sometimes the materials were pushed out to the tee at the main and could not be moved beyond that point. These developments have caused us to use the hand pump less frequently and only in those cases where the men are sure that it will not make the condition worse.

For some time we have looked for an



Side view of vacuum cleaning unit showing arrangement of generator, pump, etc.

improved method of correcting these conditions. We have found compressed air used in some instances either by compressing the air in tanks or through the use of a compressor. In one instance at least we found a company who compresses their own gas in small tanks which enables them to apply higher pressures to the stoppage than we could obtain with a hand pump and with the additional advantage that they were discharging their own gas into the service and main instead of air. Live steam and undoubtedly many other methods that I am not familiar with have been tried.

These improved methods involved additional expense in the way of tanks, compressing operations, etc., but still retained the undesirable feature of failing to remove the foreign materials. The method we were seeking was one whereby these materials could be removed from the service and not be pushed back into our mains. Such a method would save a good many service replacements and provide a better and quicker service to the customer at less cost to us. Therefore, we were opposed to in-

* Presented before the Operating Division Meeting of the New England Gas Association held in Boston, January 10, 1945.

vesting more money in any method which still pushed these materials back into our mains to cause stoppages elsewhere in services, mains, appliance controls or pilots.

We found justification for our search in the fact that gas services represent an important part of our capital structure, approximately 10%, and any improvement in maintenance operations is desirable not only from this standpoint but also from the standpoint of good customer relations. A great deal of maintenance work has been done on services to correct exposed portions and reduce winter freeze-ups with the result that this type of service stoppage does not occur as frequently as in the past. Dryer gas has also been an important agent in this accomplishment, but since every action has its reaction we find ourselves dealing with a type of service stoppage which, although occurring less frequently than freeze-ups, is certainly more difficult to correct through ordinary methods.

It is important that those responsible for the maintenance of mains and services exercise the utmost diligence in their stewardship and no one is more diligent than



Vacuum hose attached to service

our Engineer of Distribution, C. S. Goldsmith, who early in 1944 learned that a method of the kind we were seeking was being used by Public Service Corporation of New Jersey. His investigations showed that the Public Service Corporation had been using the vacuum method with sufficient success to warrant a trial by us.

Since the war imposed restrictions on equipment and materials for building apparatus, we had to make the best use of such equipment and materials as we had on hand with the result that our first vacuum unit was something of a make-shift. It consisted of a 500-gallon tank which we had on hand, lengths of pipe, hoses, etc. We mounted these on a platform type truck but since we did not have a vacuum pump it was necessary to assign a street compressor for the trial. This made it necessary to use two automotive units but we decided to do this since the result promised to be worth the effort.

We were particularly fearsome that pulling a vacuum on a service might put out pilots in adjoining buildings and we

watched this phase of the work very carefully. It did not take long to prove that our fears of pilot outages were groundless.

The trial proved successful and we then obtained permission to build an improved unit which eliminated the street compressor and two men. The present unit is mounted on a single truck, manned by a serviceman, helper and chauffeur who also acts as helper. The unit is briefly described below:

A Model HR Homelite generator, gasoline driven, supplies 110 volt D. C. current to an electrically driven Nash Hytor vacuum pump which operates at 1725 R.P.M. and is capable of pulling a 26" vacuum. The inlet of the vacuum pump is connected by 1 1/4" pipe through a 3" tee, which serves as a filter, through a 1 1/4" control valve and thence to the 500-gallon tank. The outlet of the vacuum pump is connected with 1 1/4" piping to the top of a 20-gallon recirculating seal tank approximately 3/4 full of liquid (summertime water, wintertime 2 to 1 mix of water and anti-freeze). A 3/4" recirculating seal line connects the bottom of the seal tank to the 1 1/4" inlet of the pump. This seal tank is required to keep the liquid level in the pump at a distance of 1" below the centerline of the rotor shaft and maintain the rotor in hydraulic balance.

A silencer or muffler is connected to the top of the seal tank to allow the escape of the discharged air of gases. A 2" line runs from the 500-gallon vacuum tank through a control valve to a small baffled tank which is used to collect dirt, rust, etc. which is sucked from the service to prevent its entering the large tank, which is hard to clean. A flexible metallic hose 2" diameter is connected from the head of the service to the dirt collector tank which is emptied daily.

It takes ten minutes to pull a 24" vacuum on the 500-gallon tank, and we have found that 24" of vacuum is sufficient to do the job. Then the pump is shut off and the control valve between the head of the service and the 500-gallon tank is opened. The vacuum in the tank sucks the service clear.

The approximate cost of this unit was:

1—500-Gal. tank (salvaged from an abandoned central water heating unit)	\$ 20.00
1—20-Gal. recirculating tank (also salvaged)	10.00
1—Homelite generator (bought about 3 years ago at a price of \$300.00 for emergency street lighting and still available for this use if necessary)	300.00
1—Nash Hytor unit consisting of a 1 1/2 H.P. 110 volt D.C. motor and vacuum pump, type D.M., 1725 R.P.M. at a cost of	435.00
The dirt collector tank, miscellaneous pipe, valves and fittings plus labor for assembling the unit cost approximately	165.00

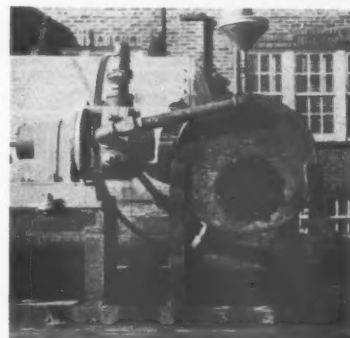
The unit, therefore, cost us approximately \$950.00 exclusive of the truck.



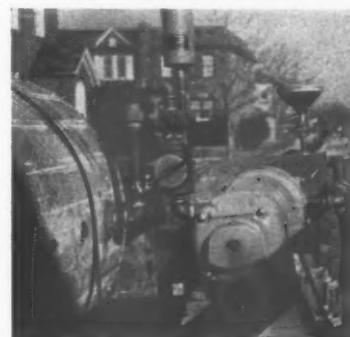
End view of unit showing "collector"



Close up of vacuum hose connected to service



View of re-circulating tank which maintains hydraulic balance in vacuum pump



Connection between vacuum tank and pump showing strainer which prevents foreign matter entering pump and damaging blades

We can replace the Homelite generator and the electric motor with a gasoline driven pump when again available to further simplify the unit and its operation.

Procedure for using the vacuum unit follows:

1. Check length of service and size of main from the records.
2. Check pilots, etc. in houses on each side of service to be vacuumed as well as houses on the opposite side of the street, if the service is a long one attached to the main on the far side of the street.
3. Remove plug from service and take pressure reading.
4. Shut off service valve and disconnect meters on inlet side.
5. Check meter cocks for tightness. If cocks are not tight, remove meters and cap openings.
6. Use snake or rod to loosen stoppage.
7. Do not use pressure pump on stoppages composed of dust or rust because of the tendency of this material to pack.
8. Attach vacuum machine and remove stoppage.
9. Replace meters, turn on gas and re-light appliances.
10. Check appliances in one house on each side of service if short service. Also check one house on each side of service on opposite side of street if long service.

The rod mentioned in Item No. 6 is known as a "clog-out tool." It was devised by one of our Street Department men and consists of a reamer head which can be readily changed to either the auger or cutting type head. The head is connected to a series of sectional handles and is placed into the service through a gas-tight rubber gland. The rod is pushed until the head contacts the stoppage. Then, by applying pressure to the rod as the handle is turned, the head cuts its way through the stoppage.

In Service One Month

We began the use of the vacuum unit in the latter part of July, 1944 but the single unit described above has only been in service about one month. We have cleared services in all types of buildings and in congested as well as open areas without extinguishing a single pilot. During this period the unit has successfully completed 477 poor-supply and no-gas complaints at services and had but fifteen cases where they were unable to complete the job necessitating further action by our Street Department.

The type of service installation on which the unit was unsuccessful is described in four of the cases below:

1. An $1\frac{1}{4}$ " service 45 ft. long was stopped. It could not be cleared with snake, pump or rod because the service pitched too close to the ceiling to attach the vacuum connection and it had to be relayed.
2. An $1\frac{1}{4}$ " service 55 ft. long was trapped and filled with water at the low point. The vacuum pump cleared the water, but the service was badly trapped and had to be relayed.
3. Two $1\frac{1}{4}$ " services supplying house without cellars. Both services terminated

in upright pieces of pipe about 6 ft. long with elbows at each end. Both services had to be relayed as the unit could not be applied.

Several small services, $\frac{3}{4}$ " and 1", were successfully cleared and will be useful for some time. Services in the smaller sizes may prove inadequate in the future, but postponing replacement now is an aid to our Street Department who are burdened because of the war.

This type of stoppage does not seem to occur generally throughout our territory but appears to occur most frequently in certain of the older sections. We weighted the material removed from some services and found that it averaged 3 lbs. per service. It does not follow that this average weight would remain at 3 lbs. per service under long term recording because at one case we found the stoppage caused by a stick of wood and in another case we found the stoppage caused by a wad of paper both of which the vacuum unit withdrew. However, if the average weight of rust, dust, etc. removed held at 3 lbs. then we would have removed 1,431 lbs. of materials from the 477 jobs completed and it is apparent that this much material of the type indicated could certainly prove recurrently troublesome if not removed.

We have trained six of our long term servicemen on this work, the youngest of whom is 48 years of age with 28 years of

service. These men are in charge of the operation because of their experience. The chauffeur and helper are younger men with shorter terms of service but it is important to have an experienced man in charge of the work because a man may at any time come across a freak job which requires experience to cope with.

During the period August 1 to December 31, 1944, we completed 12,262 no-gas and poor-supply complaints including the 477 jobs handled by the vacuum unit. Therefore, we are dealing with the fewest but most costly type of job in this classification and several important things are accomplished. We reduce our service maintenance costs, provide faster service to our customers and prevent subsequent complaints elsewhere by removing the foreign materials from the services.

The average cost of clearing a service with the present vacuum unit is \$10.00 since the crew completes an average of three jobs plus per day. Therefore, our total cost of vacuum cleaning 477 services can be put at \$4,800 and an idea of the possible economies to be gained through this method may be had from the fact that relaying 477 services might cost us approximately \$38,000.

Our five months' experience has convinced us that the method is satisfactory and we plan to augment the service with one additional unit sometime in the future.

POSTPONE DISTRIBUTION AND MOTOR VEHICLE CONFERENCES

AT a well-attended meeting of the program committees, held January 16 in New York, it was recommended that the Distribution and Motor Vehicle Conferences of the A. G. A. Technical Section be indefinitely postponed in response to the Government's request to curtail all meetings of more than 50 people. Subjects normally covered at these meetings have been assigned to authors for preparation of articles for publication in the A. G. A. MONTHLY and gas trade journals. T. H. Kendall, chairman, Distribution Committee, and S. G. Page, chairman, Motor Vehicle Committee, presided at the meeting.

In view of the contemplated conference postponements, it was also recommended that present committee and subcommittee chairmen and vice-chairmen be sponsored for reappointment next year.

Subjects discussed for article development included the following: Short Wave Radio, Use of Zinc in Prevention of Corrosion, Customer Metering, Air Tools, Distribution Capacities, Safety in Distribution Practice, Summary of Corrosion Studies, Selection and Training of Corrosion Personnel, and Standardization of Automobile Bodies.

The tin in solder regulation covered in

the new Schedule V of Order M-43, amended Dec. 30, 1944, also came in for considerable discussion.

Attending the meeting, in addition to Chairmen Kendall and Page, were: J. H. Collins, New Orleans, vice-chairman, Distribution Committee; B. D. Connor, Boston, vice-chairman, Motor Vehicles Committee; L. E. Knowlton, Providence; H. L. Gaidry, New Orleans; A. V. Brashear, Detroit; Linn Edsall, Philadelphia; L. A. Evarts, Garden City, L. I.; H. B. Andersen, Philadelphia; A. C. Cherry, Cincinnati; R. F. Hadley, Philadelphia; C. C. Jones, Philadelphia; C. S. Goldsmith, Brooklyn; A. V. Smith, Philadelphia, and A. Gordon King, New York.

Koppers Coke Ovens

CONSTRUCTION of ten batteries of by-product coke ovens, totaling 622 ovens, with an annual coal carbonizing capacity of 4,809,000 tons was completed by Koppers Company, Inc., Engineering and Construction Division in 1944.

During the year the company also started construction of six additional batteries, totaling 457 ovens, with an annual coal carbonizing capacity of 4,027,000 tons.

Pipe Thread Standardization

A NUMBER of subcommittees of Sectional Committee B2 on the Standardization of Pipe Threads, has been discharged since their work has been completed, A. S. Miller, chairman of the committee, announced. The project is under the joint sponsorship of the American Gas Association and the American Society of Mechanical Engineers.

The proposed revision of American Standard Pipe Threads, ASA B2.1, covering specifications, dimensions, and gaging for taper and straight pipe threads including certain applications, is now in proof form and has been submitted to the sponsor bodies for approval. It is expected to be released shortly.

Cast Iron Pipe Standards Report

A PROGRESS report on Standard Specifications for Cast Iron Pipe and Special Castings, prepared by the A. G. A. Distribution Subcommittee on Cast Iron Pipe Standards, C. C. Jones, chairman, has been published and is available upon request to the Association.

Included in this interim report are a number of tentative tables, giving recommended wall thickness of cast iron pipe for different laying conditions, revision of the A. G. A. flange standard, and tables giving the dimensions for plain end fittings. The first table also gives the various dimensions of the modified gas bell as approved.

It is believed these tables will be helpful to the industry before publication of the final Standard Specifications.

Technical Section Conferences Off

THE Distribution, Motor Vehicles and Joint Production & Chemical Conferences, following recommendations of the Technical Section, were cancelled by the A. G. A. Executive Board on January 23. After this action had been taken, L. E. Knowlton, chairman of the Section, in a letter to committee chairmen and members outlined the Section's plans as follows:

"It is possible that some Sections of the Association may arrange for regional meetings where the attendance will not exceed fifty, and where there are matters of particular current interest to be discussed. This does not seem to me to be a practical idea for the Technical Section because the value of our Conferences has been largely due to the attendance of representatives of different sections at one meeting. This was also the consensus of opinion of the Distribution and Motor Vehicles Program Committee.

"It seems that we must consider the discussion of papers and the informal discussions in luncheon conferences, which

have been such an important part of our Conferences in the past, as war casualties. The Distribution and Motor Vehicles Program Committee hopes to secure as a substitute for papers that might have been presented at their Conference articles for publication in the A. G. A. MONTHLY and the trade press. I suggest that the Gas Production and Chemical Committees, either jointly or separately as may seem more feasible, plan to follow this same scheme. While this may be done by correspondence, it would seem easier and quicker to make such arrangements in a Program Committee meeting.

"I realize and appreciate the fine work that has already been done in the organization of Committees and in preliminary plans for Conferences. It is my hope that this organization and this preliminary work may be used to further advantage in the next Association year if the activities of the Section are curtailed throughout this year."

Turner Memorial

THE high regard of Technical Section personnel for the services and character of their immediate past chairman, the late Charles F. Turner, is expressed in an engrossed memorial sent to Mrs. Turner. It reads:

"The officers, committee chairmen and members of the Technical Section of American Gas Association desire to record and to express their appreciation of the outstanding services rendered to the Section by Charles F. Turner through the years of his association with the Section as member, committee chairman and chairman of the Section.

"As our association with him progressed, our great liking, respect and admiration for him as a man and as an engineer, but most of all as a friend, steadily increased. "Our loss is great and we extend our deepest sympathy to his family."

Chemical Use of Gas Negligible

THAT present and future requirements of petroleum and natural gas for chemical use are negligible, was revealed in a report submitted at the winter quarterly meeting of the Interstate Oil Compact Commission. The Compact's Regulatory Practices Committee, composed of regulatory officials of the producing States, filed a report showing the consumption of natural gas for 1943 as follows: Field consumption 20.8%; domestic use 14.6%; commercial use 5.8%; carbon black manufacturer 8.7%; petroleum refineries 7.4%; electric plants 8.3%; cement industry 1.4%; other industrial 33%.

The report showed that for 1944 the chemical industry consumed less than 1% by weight of all petroleum and natural gas produced for the year, and that the expanded use of gas as a raw material for chemical products will not, in the immediate future, consume an appreciable portion of natural gas production.



T. H. Kendall and J. H. Collins, chairman and vice-chairman respectively of the Distribution Committee, at the Jan. 16 meeting



A. C. Cherry, past chairman, Distribution Committee, and Harold L. Gaidry, past chairman, Technical Section



S. G. Page, chairman, Motor Vehicle Committee, and B. D. Connor, vice-chairman

Pipe Stress Determined

DEVELOPMENT of an apparatus to determine stresses on pipes for oil, gas, refinery and other construction, with measuring standards achieved to one-millionth of an inch, was announced recently by M. W. Kellogg Co.

The basic and exclusive feature of the equipment, as described in the company's magazine, is a series of measuring heads, each containing six gauges which are refined to such a degree that they can register stress differentiations of one-millionth of an inch.

Personal and Otherwise

Jones and Little Win Promotions



F. B. Jones

F. B. JONES has been appointed manager of sales and market research of the Equitable Gas Company and the Pittsburgh and West Virginia Gas Company, Pittsburgh, Pa., D. P. Hartson, vice-president and general manager of the companies, has announced.

Mr. Jones was graduated from the University of Kentucky and entered the employ of the companies in 1925. He is active in American Gas Association work and was general sales manager of the gas companies until his present promotion.



Raymond Little

Raymond Little has been appointed general sales manager of the Equitable Gas Company and Pittsburgh and West Virginia Gas Company. Mr. Little entered the service of the gas companies in 1926 following his graduation from the University of Pittsburgh. He was manager of commercial sales until his present appointment.

An authority on long-term weather trends, Mr. Little is A. G. A. representative on the National Joint Committee on Weather Statistics. He contributed an article on this subject to the September 1943 issue of the A. G. A. MONTHLY.

Douglas Named

JAMES B. DOUGLAS of The Philadelphia Gas Works Company, who has represented the American Gas Association for some years on the Safety Code Correlating Committee of the American Standards Association, has been nominated for vice-chairman of that committee for 1945.

Brooklyn Union Men Win Recognition

TEN men with service records of 50 and 55 years were among 196 employees of The Brooklyn Union Gas Company who received service emblems at the end of 1944 denoting the completion of 25 or more years with the company. Oldest in point of service is Frank H. Averill, with 67 years, but there are 41 others who have reached or passed the half-century mark.

In his address at the presentation ceremonies, President Clifford E. Paige, an A. G. A. past president, noted that the company now has 1,046 employees, nearly a third of those on the payroll, with service records of 25 or more years—a truly remarkable record.

Among 37 employees honored for life saving and other meritorious acts, were 8 who received McCarter medals and 2 who received McCarter certificates of assistance. McCarter medal winners were: Frank Chiappone, Ray Fortier, Joseph F. Fursa, Frank J. Kiernan, Edward F. Langan, John H. Mantell, James A. McDermott, and Franklin T. Smith. Certificate of assistance went to Joseph F. Clark and Franklin T. Smith.

The McCarter medals are awarded by the American Gas Association for outstanding acts of life saving by use of the prone pressure method of resuscitation.

Zachry Heads Southern Union Gas Co.



C. H. Zachry

president since 1943. He will continue as chairman of the board and will remain active in the affairs and operations of the company.

C. H. Zachry has been an executive of the firm for more than eleven years, his most recent office having been executive vice-president and general manager. He is a member of the Managing and Advisory Committees of the American Gas Association, Natural Gas Department; American Gas Association Research and Promotional Development Committee; director of the Independent Natural Gas Association; former director and president of the Southern Gas Association.

Other officers of the company are F. W. Smith, vice-president-treasurer, Dallas;

James C. Reid, vice-president and operating manager, Dallas; James R. Cole, vice-president, Santa Fe; Ross Byron, vice-president, Chicago; H. V. McConkey, secretary, Dallas.

Southern Union Gas Company, a natural gas utility with headquarters in Dallas, Texas, was organized seventeen years ago. Today the company is serving approximately 60,000 consumers in 29 cities in Texas and New Mexico. Prior to 1942, it was a holding company but through mergers and consolidations required by the Securities and Exchange Commission, it has been integrated and is now an operating company.

Southern Union's gross revenues in 1944 were in excess of five million dollars.

Advertising Manager of Philadelphia Group



Herbert Briggs, Jr.

A native of Terre Haute, Indiana, Mr. Briggs was graduated from the Rose Polytechnic Institute in 1920 as a mechanical engineer. After one year with the Illinois Steel Company in Chicago, he entered the service of the Duquesne Light Company in 1921 as a test engineer. He entered the Advertising Department in 1925 and later became assistant advertising manager, which position he held at the time of his promotion.

Smith Elected President of Atlantic City Co.

EARL SMITH has been elected president of the Atlantic City Gas Company, succeeding Robert W. Wiederwax who died December 6.

Mr. Smith started in the gas business in 1911 with the C. H. Geist Company at Lansing, Michigan. In March 1920 he was transferred to the Atlantic City Gas Company as superintendent of manufacture. When Public Service Corporation of New Jersey acquired control of the Atlantic City Gas Company in July 1930, Mr. Smith continued as superintendent. In December 1941 he was promoted to general superintendent, which position he held at the time of his election as president.

On March 6, 1945 Mr. Smith will celebrate his twenty-fifth anniversary in the employ of Public Service and predecessor companies.

Directs Sales for New York Utilities



L. A. Scofield

Sellman, assistant vice-president. He was formerly general distribution manager for the three companies.

Mr. Scofield was first employed by the Consolidated Edison System in 1912 as an assistant tester in the test department of the New York Edison Company. He has held various engineering jobs, including that of power engineer in the sales department.

In the first World War he enlisted in the Army and served with the A. E. F. In 1943 he acted as consultant to Lieutenant General Somervell in the reorganization of the industrial personnel division of the Army Service Forces.

FPC Executive Joins E. Holley Poe



H. Zinder

Mr. Zinder was responsible for the direction and supervision of the Commission's activities involving both gas and electric rates. For several years he was also responsible for the direction and supervision of the Commission's statistical activities.

Mr. Zinder has spent 20 years in the public utility field most of which has been in the field of state and federal regulation and in the public service. He was called to participate in the initial formulation of policies as to rates and as to the design of rates for such federal projects and programs as the Tennessee Valley Authority, Electric Home and Farm Authority, Rural Electrification Administration and others. He also initiated courses in public utility rates both at Northwestern University and

in the Graduate School of the Department of Agriculture where he lectured on the subject and also on Public Utility Operation and Management at Northwestern University.

A graduate engineer from Carnegie Institute of Technology he received his Masters Degree in Business Administration from Northwestern University. He also completed the Central Station Institute Course of the Commonwealth Edison Company in Chicago.

From 1924 to 1931 Mr. Zinder was with the Commonwealth Edison Company of Chicago. He was chief rate analyst for the Public Service Commission of Wisconsin from 1931 to 1935. He was granted a leave of absence by this Commission to assist the REA in formulating its rate policies and subsequently joined the REA staff as Chief of its Rate Section.

He joined the staff of the Federal Power Commission in 1937.

Rochester Executives Move Up

ADDITIONAL information on promotion of executives of the Rochester Gas and Electric Corp., Rochester, N. Y. reveals that, Edgar R. Crofts, has been named vice-president. Announcement of the appointment of Alexander M. Beebee and Robert E. Ginna was made in the January A. G. A. MONTHLY.

Mr. Beebee, who went to the company from Cornell in 1916, has been general superintendent of the gas department for several years and is now vice-president in charge of all the company's gas activities. He is chairman of the A. G. A. Postwar Planning Committee.

Mr. Crofts has been assistant to Operating Vice-President Joseph P. Haftenkamp and becomes vice-president in charge of

electric activities. He entered the employ of the company in 1916, just one month after Mr. Beebee began his duties and is also a graduate of Cornell.

Mr. Ginna has been assistant to President Herman Russell and is now vice-president in charge of rates and regulatory matters. Mr. Ginna has been active in both gas and electric industries since going to Rochester in 1934 as manager of the rate and contract department. Before entering company employ he was engaged to make several surveys and performed other services.

Mr. Haftenkamp continues as general operating vice-president.

Laboratories Appoint Research Supervisor



Milton Zare

PROMOTION of Milton Zare to the newly-established position of supervisor of research has been announced by R. M. Conner, director of the American Gas Association Testing Laboratories. Expansion of the supervisory staff which the promotion entails was considered essential to

carrying out the greatly expanded research program, particularly in domestic gas research in which the Laboratories are now engaged.

Mr. Zare is well known in the gas industry through his activities in approval requirements committee work and publication of research bulletins and reports. He has been employed by the Laboratories for nearly nine years, joining the staff as a



Newly appointed vice-presidents of Rochester Gas and Electric Corp.; R. E. Ginna, A. M. Beebee, and Edgar R. Crofts. Mr. Beebee heads up A. G. A. Postwar Planning Committee

chemist soon after his graduation from Ohio State University. He has also completed graduate work in chemistry at Western Reserve University and Case School of Applied Science, all providing a broader background for his research endeavors.

In announcing the promotion, Mr. Conner paid tribute to Mr. Zare's loyal and efficient service which has so well qualified him for his new assignment. He assumed his new duties January 1, exercising immediate floor supervision of all research projects including domestic gas, requirements, industrial and air conditioning studies.

Romig Treasurer

LD. ROMIG was elected treasurer of the Southern California Gas Company at a meeting of the board of directors on December 20, according to an announcement by F. S. Wade, president.

Mr. Romig, who has been with the gas company since 1922, formerly held the position of assistant controller. He succeeds G. A. Detrick who has been forced to retire because of ill health.

In addition to his duties as treasurer, Mr. Romig will serve as manager of the Tax Department.

Howard Steps Up

HERBERT S. HOWARD was elected an assistant controller of Niagara Hudson Power Corporation on January 4 by the board of directors. He has been manager of the tax and audit departments of the Niagara Hudson System since 1942 and was associated with Henry W. Breyer Co., of Philadelphia, from 1935 to 1942 and with the Philadelphia office of Price, Waterhouse & Co. from 1925 to 1935.

Although a native of Philadelphia, Mr. Howard received his early schooling in England and later attended Temple University and the Wharton School of Finance and Commerce, of the University of Pennsylvania, becoming a certified public accountant in 1929. He is a member of the Pennsylvania Institute of Certified Public Accountants.

Davis Joins Servel

APPPOINTMENT of R. E. Davis as service manager of the air conditioning division of Servel Inc., Evansville, Ind., has been announced by John K. Knighton, air conditioning sales manager.

Mr. Davis joined Servel in 1931, prior to which time he had been associated with two different Servel distributors, A. Baldwin Co., New Orleans, La., and with the Servel distributor in Oklahoma.

Since joining the company he has served as field service engineer, export representative in Europe and the Near East, and was in charge of educational and service activities on commercial gas refrigeration. He has been connected with gas air conditioning since 1941.

American Meter Honors 25-Year Employees

PRESENTATION of certificates and emblems was made recently to fifty-six workers of the D. McDonald & Co. Works of American Meter Company who have been with the company's Albany, N. Y. plant for twenty-five years or more. Norton McKean, president and general manager of American Meter Company, announced the organization of a "Twenty-Five Year Service Guild," formed to honor those employees.

The fifty-six whose services were commemorated have a combined employment record of 1961 years. The oldest employee, Bernard H. Holtslag, has been a meter maker for fifty-eight years. A close second, James Amesmaier, has a record of fifty-four years of service.

In his address to the employees Mr. McKean commented that the company is now devoting 71 per cent of its operations to war work, and the balance to essential meter and meter maintenance orders.

On A. G. A. Committee

NEW members of the Publicity and Advertising Committee of the American Gas Association, as announced by J. French Robinson, president, are:

H. K. Wrench, president, Minneapolis Gas Light Co., Minneapolis, Minn.

H. N. Mallon, president, Dresser Industries Inc., Bradford, Pa.

J. H. Warden, general sales manager, Oklahoma Natural Gas Co., Tulsa, Okla.

The chairman of the committee is C. A. Tattersall, vice-president, Niagara-Hudson Power Corporation, New York, N. Y.

Long Island Lighting Chairman Retires

ELLIS L. PHILLIPS retired January 8 as chairman of the board and a director of the Long Island Lighting Company, having passed the normal retirement date of service with the utility system. Similarly, Mr. Phillips retired from the respective boards of subsidiaries of Long Island Lighting.

Mr. Phillips' retirement culminates 35 years of service with the company since its incorporation in New York State on Dec. 31, 1910. He is the last member of the original board of directors to retire from participation in the company's affairs.

Suffron Joins Hammel

FAY SUFFRON, former supervisor of the American Gas Association's Testing Laboratories at Los Angeles, has been appointed a research engineer on the staff of Hammel Radiator Engineering Co. of Los Angeles.

Mr. Suffron, a graduate in civil engineering from Oregon State College, is a well-

known figure in the gas industry throughout the country. He was formerly with Portland Gas & Coke Co., Portland, Oregon, and with Washington Gas & Electric Co., Tacoma, Washington. For a period of 10 years he was an active member of the research staff of the American Gas Association, first at the testing laboratories in Cleveland, and later as supervisor at the A. G. A.'s Los Angeles Laboratories.

Col. McClenahan Home

COL. ROBERT W. McCLENAHAN, who was recently awarded the Order of the British Empire for distinguished service in cementing ties between the Allied Nations, has returned to the United States on leave after three years continuous war intelligence service. He is manager of the Philadelphia office of the American Meter Company.

While lately stationed in the European area, Col. McClenahan has been on duty mainly in the Near East. A native of Cairo, where his father was principal of the American College, he speaks Arabic and was present at the Cairo and Teheran conferences.

Executive Changes in New York Utility

THREE changes in New York State Electric & Gas Corporation's executive personnel were announced January 2 by Ralph D. Jennison, president.

William G. Hickling, vice-president in charge of operations, assumed additional duties as general manager; A. W. Milliken, vice-president and manager of the company's eastern division, was made superintendent of operations under Mr. Hickling and J. F. Farley, general auditor for several years, was made assistant to Comptroller H. C. Fleck.

Under the changes, Mr. Hickling continues as head of operating matters on a state-wide basis and in addition, the company's five division managers and the heads of safety and personnel report to him.

Emergency Squad Wins McCarter Medal

THE emergency squad of the Trenton, N. J., electric distribution department, Public Service Electric and Gas Company, was recently awarded a McCarter medal by the American Gas Association for having saved a life by application of the prone pressure method of resuscitation. Members of the squad, composed of Joseph McCusker, Theodore Swanson, Charles Robinson, Neil Waugh, and James Hughes by quick and effective action saved the life of a woman who had been overcome by gas.

The medal was presented to Mr. McCusker, captain of the squad, by W. R. Smith, safety engineer, electric department, at a meeting of employees at which Percy



Officials and guests of the Harrisburg Gas Company at special presentation of the National Security Award. Left to right: L. D. Wilson; Louis C. Smith, company president; Col. Wilfred A. Morgan, commanding officer, Harrisburg sub-district, 3rd Service Command; Mayor H. E. Milliken; Ray F. Riegelmeier, plant protection officer, State Council of Defense; D. J. Wait, Federal Power Commission; Col. L. G. Adams, commander, protective services, State Council of Defense; (standing) Richard L. James

B. Bass, division superintendent, presided. Creator of the medal was Thomas A. McCarter, chairman of the board of Public Service Corporation of New Jersey, who wanted to stimulate interest in the knowledge of the prone pressure technique of life saving. Seventy-one awards have been made to Public Service employees.

Sets Safety Record

FOR the second time in the history of the Philadelphia Electric Company a full year's work has been completed without a fatal accident, H. B. Bryans, executive vice-president, announced January 10. The last fatality was on September 16, 1943. Only previous year without such an accident was 1941.

Fourth Term For Major Strickler

MAJOR T. J. STRICKLER, vice-president and general manager, Kansas City Gas Company, and past president of the American Gas Association, has been re-elected for his fourth successive term as president of the Kansas City War Chest.

The 1944 drive netted 101.3 per cent of the campaign goal of \$2,300,000.

Fulton Appointed

APPOINTMENT of Edwin Fulton, engineer, to supervise the Sales-Service, Service, and the Meter Divisions of the Richmond, Va., Department of Public Utilities, was announced recently by Director J. R. A. Hobson, Jr. Prior to joining the Richmond utility, Mr. Fulton was vice-president of the Rock Hill Gas Company.

Harrisburg Gas Co. Wins Security Award

THE Harrisburg Gas Company, in recognition of "extraordinary achievement in establishing and maintaining security protection measures against enemy air-raids, fires, sabotage, and avoidable accidents," has received the National Security Award and pennant. The award, which takes into consideration observance of Federal Power Commission regulations, was presented on recommendation of the Dauphin County and State Councils of Defense and carried the approval of the United States Office of Civilian Defense, Washington.

The award was presented at the company's service building, by Col. Wilfred A. Morgan, commanding officer of the Harrisburg Third Service Command.

Gas Executive Honored

GEORGE DIXON, engineer and manager of the Nottingham, England, gas undertaking, has been awarded the Order of the British Empire by King George VI for his contributions to the war effort. Mr. Dixon was a member of the large British delegation to the American Gas Association convention in Chicago in 1933 and the tour of the United States and Canada.

Made C of C Head

LEROY M. EDWARDS, vice-president and general manager, Pacific Lighting Corp., and vice-president of Southern California and Southern Counties Gas Companies was elected president of the Los Angeles Chamber of Commerce in January.

Pennsylvania Natural Holds Annual Meeting

THE annual meeting of the Pennsylvania Natural Gas Men's Association was held January 11 at the Fort Pitt Hotel, Pittsburgh. Principal speaker was Kenneth S. Covey, manager of the Veterans' Administration, who discussed the responsibility of industry under the "G.I. Bill of Rights."

Directors elected to serve in 1945 are C. E. Bennett, E. M. Borger, E. J. Egan, H. D. Freeland, D. P. Hartson, J. H. Isherwood, Dan S. Keenan, B. D. Phillips, H. H. Pigott, S. C. Preston and G. E. Welker. Mr. Welker, who is president of United Natural Gas Co., Oil City, Pa., and past chairman of the A. G. A. Natural Gas Department, was 1944 president of the Pennsylvania association.

Honorary board members elected at the meeting are T. B. Gregory, F. F. Schauer, and George Wittmer.

A meeting of the board was scheduled for January 22 at which time a new slate of officers was to be selected.

P.C.G.A. Proceedings Out

PROCEEDINGS of the Pacific Coast Gas Association, covering important papers, reports and discussions presented before P. C. G. A. during 1944, were published last month. In addition to reports presented at the business sessions of the Association's annual meeting, the 1944 volume, which is No. 35, covers material contributed by Accounting, Manufacturers', Sales and Advertising, and Technical Sections.

This book, containing more than 150 printed pages, contains a wealth of authoritative information on current and postwar problems. The P. C. G. A. is widely recognized as one of the outstanding associations in the country and its valuable work is reflected in its published reports.

Copies are available from the Pacific Coast Gas Association, 447 Sutter Street, San Francisco, California.

Mobile Telephones for Utility Use

RAPID expansion of mobile telephone service as soon as restrictions are lifted is predicted by Samuel Shane in the recent *Wall Street Journal* article. Discussing these two-way radio systems, the writer says the Federal Communications Commission now has officially recognized this service and given it the "go-ahead" signal on a limited scale. Strictly experimental, so far, it is in actual but limited operation in two big cities, New York and Boston.

Among the uses foreseen by the Bell System is for utility companies to keep in constant contact with repair men, the article pointed out. The Bell System has estimated that in the next five or ten years mobile 'phones will be used by perhaps 10,000 vehicles in New York City, if it can be made available.

Obituary

LESTER B. WIEGERS

LESTER BRYSON WIEGERS, vice-president, secretary-treasurer and member of the board of directors of Electric Bond and Share Company died January 8 of a heart attack. He was 42 years of age.

Born in Jersey City, N. J., son of Mr. and Mrs. P. William Wieggers, Mr. Wieggers joined the company as a member of the accounting department in January 1925. Prior to that time, he was with Marwick, Mitchell & Company, certified public accountants. In November 1935, he was appointed assistant secretary and assistant treasurer of Bond and Share and five years later became secretary-treasurer and a director. On November 16 last, Mr. Wieggers was appointed a vice-president retaining his duties as secretary-treasurer and continuing as a member of the board of directors.

FRED G. MERKER

FRED G. MERKER, manager of the Orange County District of the Southern Counties Gas Company, Los Angeles, died January 9.

Manager of the company's largest district, Mr. Merker entered its service on September 20, 1920, holding successively the positions of salesman, chief clerk and commercial agent at Santa Ana. In 1927 he was advanced to the position of district manager of the Ventura District, where he remained for six years.

Upon the retirement of Orange County District Manager C. E. Rutledge, Mr. Merker was recalled to Santa Ana and assumed the district manager's post.

During his long and active career, Mr. Merker took a prominent part in business, civic and social activities.

ROBERT S. McCARTY

ROBERT S. McCARTY, advertising manager of the Philadelphia Company and subsidiary companies of Pittsburgh, Pa., and for the trustees, Pittsburgh Railways System, died December 31 after a long illness.

Born in Uniontown, he attended Uniontown Schools and was graduated from University of Pittsburgh in 1919. His first position was an engineer with Morris Knowles, Inc., and he entered the employ of the Philadelphia Co. in April, 1921 in the engineering department, later becoming engaged in public relations work. He became advertising manager in 1925. He was past president of the Pittsburgh Advertising Club, and the Public Utilities Advertising Association.

He was prominent in Community Fund Work (being chairman of the publicity committee), Kiwanis Club (chairman an-

nual Charity Ball for several years). He was a member of the Pittsburgh and Pennsylvania State Chamber of Commerce; Pittsburgh Convention and Tourist Bureau; Electric League of Western Pennsylvania; Pennsylvania Electric Association; Edison Electric Institute and the American Gas Association.

A. J. VOORHEES

ANDREW J. VOORHEES, assistant secretary, The Brooklyn Union Gas Company, died Jan. 15 at the age of 63.

Mr. Voorhees joined Brooklyn Union on December 12, 1910, as secretary to James H. Jourdan, then vice-president. He remained Mr. Jourdan's secretary when the latter became president and later chairman of the board. He was elected assistant secretary of the company on Mar. 10, 1938.

British Gas Companies Under Bombardment

AFTER a four and a half year bombardment by shells, massed air raids and V-bomb attacks, the curtain has been lifted by British censors to reveal some of the difficulties overcome by gas and electric companies on the South-East coast of England. This story, as told in the *Gas Journal* for Dec. 20 and the *Gas World* for Dec. 23, is one of astonishing technical skill, courage, resourcefulness and endurance.

Since the summer of 1940 gas and electric companies in South-East England have been a special target for German attacks of all types. Gas utilities at Dover, Folkestone, Ramsgate, Deal and Walmer, suffered time and again from main, holder, and plant damage. Some of the gas holders have been completely wrecked by shell hits, others have caught fire and been destroyed. There is no record of any holders exploding. Numerous personnel casualties have been suffered but in very few cases has gas service been interrupted for any appreciable length of time.

Major G. Lloyd George, Minister of Fuel and Power, in revealing details of the attacks, said: "I wish to pay tribute to managements and employees who at all times and in all conditions have shown a wonderful spirit in facing the hazards of bombs and shells, and in working for very long periods without rest to maintain a service essential to the life of the community."

New Insulating Material

THE Monsanto Chemical Company recently announced a new insulating material, Santocel, said to be twice as efficient as cork and weighing only three pounds a cubic foot. It is a derivative of silica and pours and looks like finely ground snow. It is claimed its use will make possible thin-walled postwar refrigerators with 40% more storage space than present models of the same size.

Drilling Halted on "Deepest Well"

STANDARD of California announced December 28 it was stopping further drilling in its "world's deepest well," near Taft, Calif., at 16,246 feet.

No commercial accumulations of oil were found in the lower part of the hole, although there were showings reported behind the casing, which runs to 10,999 feet. These are to be tested before final abandonment.

Drilling was begun 17 months ago as part of an intensive program to find new sources of oil for war needs and to increase the United States' known reserves.

Returned Veterans

AWAR veteran returning to his job is to be "reemployed at the level to which he would have been titled if there had been no break in his service with the company," according to a National War Labor Board's interpretation of the Selective Training and Service Act of 1940.

Personnel Service

SERVICES OFFERED

Manager with broad training and experience in the operation and management of gas properties, well grounded in the manufacture of carburetted water gas and both high and low pressure distribution. Experience also includes sales and commercial activities. College graduate with technical degree. 1486.

Operating Executive seeks return to gas industry from U. S. assignment on war contracts negotiations. Good educational background; have engineering and legal degrees and broad experience in all branches of the manufactured and natural gas phases of the industry. 1487.

POSITIONS OPEN

Manager for water gas plant, send-out about 400 M medium pressure; location South Carolina. State experience, education, reference and salary expected. 0405.

Operating Superintendent thorough knowledge of water gas. Important city of 20,000 location south. Give experience reference and salary expected. 0406.

Well-known midwestern industrial research organization offers to **Chemists, Engineers, and Physicists** essential work with promising postwar future offering opportunities for professional growth. Write fully giving details of training, experience, and age. 0407.

Wanted experienced **home economist** to take charge of Home Service Department for combination gas and electric company operating in Montana, North and South Dakota and Wyoming. Would make headquarters at Bismarck, N. D. Must be capable of conducting cooking schools and selecting and training home service girls. Send full information as to training and experience. 0408.

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